TEXTILE WORLD

MARCH • 1944

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DETROIT

RAYON STAPLE on COTTON SYSTEM

SEE PAGE 70

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Salute
TO THE U. S. MERCHANT MARINE
. . . and to those American Manufacturers who supply them with the finest of Clothing and Equipment.
CFC
COMMERCIAL FACTORS CORPORATION
Fred'k Victor & Achelis, Inc. Established 1828
Schefer, Schramm & Vogel Established 1838
Peixotto, Buhler & Co., Inc. Established 1893
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BUY U. S. WAR BONDS

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40 Per Cent More Cloth

on X Model Looms

Running 24 Per Cent Faster

Than E Models on Same Fabric

These Figures are from a Comparison of Production Sheets of More Than Eight Years of Actual Operation of Similar Lots of the Two Models of Looms by one of the Best Known Mills in the Industry.

Did you read the story in our Cotton Chats for February?

If you missed it, ask us for a copy.

Draper Corporation

Atlanta Hopedale Spartanburg

When imports of salt cake were cut off by the war in 1939, disaster loomed for the southern kraft paper industry. But Mathieson Research, in anticipation of this crisis, had mated determination with ingenuity to score a bulls-eye — *the creation of Mathieson Synthetic Salt Cake!*

Before the shortage of the natural product materialized, production of synthetic salt cake was in full swing and shipments speeding to the kraft mills. This prevented severe dislocations in manufacture and enabled the industry to proceed at capacity production.

With such discoveries that dovetail into industry's quest for swifter, more efficient production and decreased processing costs, Mathieson Research hits the bulls-eye often.

Mathieson
CHEMICALS

THE MATHIESON ALKALI WORKS (INC.) 60 EAST 42nd STREET, NEW YORK 17, N. Y.

CAUSTIC SODA . . . SODA ASH . . . BICARBONATE OF SODA . . . LIQUID CHLORINE . . . BLEACHING POWDER . . . AMMONIA, ANHYDROUS & AQUA . . . HTH PRODUCTS . . . FUSED ALKALI PRODUCTS . . . SYNTHETIC SALT CAKE . . . DRY ICE . . . CARBONIC GAS . . . SODIUM CHLORITE PRODUCTS . . . SODIUM METHYLATE

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TEXTILE WORLD

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ADVENTURE IN PROSPERITY

BERNARD BARUCH said last month, "There is no need for a postwar depression. Handled with competence, our adjustment, after the war is won, should be an adventure in prosperity."

This is a far better attitude toward the postwar era than has been expressed by some industrialists—one of whom declared the other day that he can liken the future world to only the continuous and violent eruption of a volcano. True, the correct remedy for worry is to plan how to overcome the problem which causes the worry, but there isn't much one can do about a volcano. Mr. Baruch's attitude is the preferred one for the textile industry to adopt for several good reasons.

In the first place, it happens that ours is one of the few great industries not faced with an extremely heavy reconversion problem. It has not expanded to many times its normal physical size and will not be faced with the necessity for shrinking its machine capacity and finding many new outlets for its products. Its plants are not crowded with special machinery having no peacetime application. Its normal markets are not glutted with second-hand or used units of its production. It has not departed completely from most of its big production civilian products and will not have to rebuild outlets and markets after the war. It has not, like the petroleum industry, depleted its resources. While the industry will be somewhat unique in having the problem of replacing the battered equipment which it has been forbidden to replace during the war, its overall burden will be much lighter than the average.

In the second place, developments of recent weeks show that textiles are suddenly faced with an intensified war-production problem and—for the country's sake—cannot afford to take too much time out at just this moment for excessive postwar worrying.

WASHINGTON has become genuinely disturbed about textile production. The armed services find that active combat raises the need for certain textiles beyond expectations. Civilians have drained those great fabric inventories which normally haunt textile manufacturers night and day through generations, and are calling hungrily for more. Requirements for lend-lease, relief, and other Government-sponsored exports are rising. Cotton-textile production, due to manpower problems, has fallen.

And Washington, while admitting that it has not done too much to aid the industry, nevertheless blames the industry primarily for the shortage, intimating that it has not done its utmost to establish labor-management committees, adopt learner-training programs, use women, work overtime, buy better fiber, take full advantage of incentive plans, arrange for transporting workers to and from the mills, and so on. At the same time, the industry is also accused of being unduly interested in its price-ceiling, tax, and renegotiation problems. Many of these accusations are unjust—at least in so far as they are applied to certain actively participating segments of the industry—but they should receive attention. There is always room for improvement.

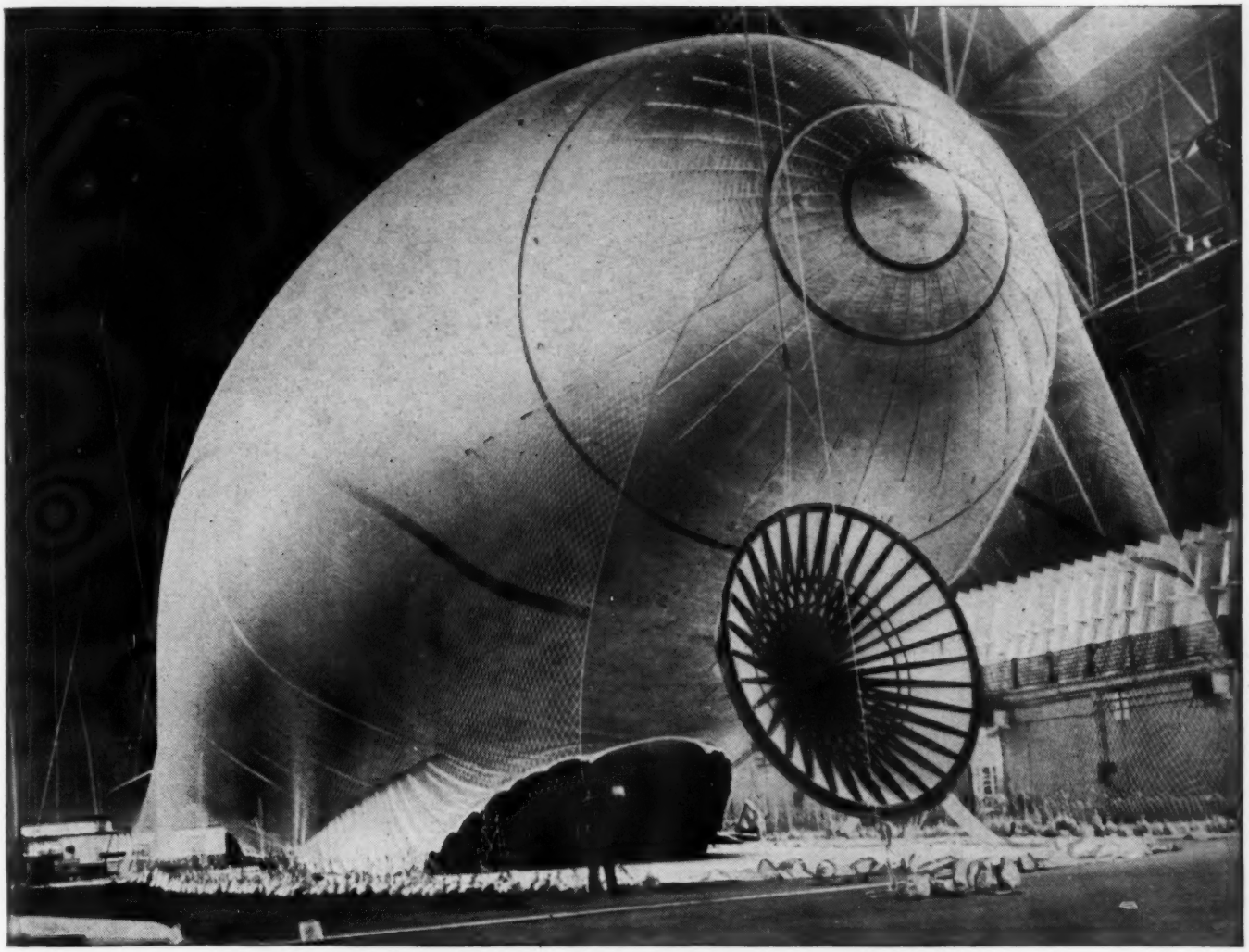
IT IS PERFECTLY TRUE, for example, that the industry has been slow to adopt the labor-management-committee idea. TEXTILE WORLD explained the establishment and operation of such committees in detail in its December issue. This month it reports the results attained by a committee in one of the country's leading mills. In future issues it will discuss the specific work of committees in other mills.

But take the labor-management committee as an example of the Government's previous attitude toward textiles. The War Production Board did little to promote the idea among textile mills. None of its posters for use by the committees, for example, had any textile-mill flavor whatever. Can other industries, therefore, take full credit, and the textile industry be fully blamed, for the disproportionate acceptance of the program?

Be that as it may, the primary function of the labor-management committee is to speed production, and it can be the basis for many improvements in the efficiency and quality of mill work. Therefore, we urge—in the interests of the war effort as well as in the interests of the individual mills for many years to come—early consideration of the committee principle.

The committees, carefully formulated and faithfully operated, can help the immediate problem of production and at the same time assist in laying the ground work for the coming "adventure in prosperity."

Edwin L. Fowle



Flying Big Top!

IT takes 26,275 sq. yds. of fabric to fashion the world's largest blimp.

Producing the wartime requirements of fabric for blimps and thousands of other Army, Navy uses, textile mills operating 'round-the-clock are finding Texaco an effective aid for keeping machinery at peak efficiency.

Texaco Stazon, for looms, assures efficient lubrication with minimum spoilage of yarn or fabric due to oil stain. It stays on fast-moving cranks, etc., withstanding load shocks without splattering, creeping, dripping. Its high stability prevents excessive formation of non-lubricating deposits in bearings or enclosed housings. For loom *cams,* use *Texaco No. 919 Lubricant S.*

So effective have Texaco lubricants proved that they are definitely preferred in many fields, a few of which are listed at the right.

Texaco Lubrication Engineering Service is available to you through more than 2300 Texaco distributing points in the 48 States.

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TEXACO

TEXACO Lubricants

FOR THE TEXTILE INDUSTRY

TUNE IN FRED ALLEN EVERY SUNDAY NIGHT—CBS ★ HELP WIN THE WAR BY RETURNING EMPTY DRUMS PROMPTLY

"IMPOSSIBLE WEATHER WE'RE HAVING," *said the Sergeant*

We-e-l-ll, not exactly impossible.

After all, the stratosphere has been up there some seven miles and more above the earth for a long time. But only recently has it been possible for man to *create* stratosphere weather with its extremely low temperatures and atmospheric pressures.

General Electric equipment that fills a test chamber with "impossible" weather points the way to better air conditioning for homes, stores, factories, schools, theaters . . . because we've learned how to make air conditioning equipment more compact, more efficient, with balanced and uniform control over a wider temperature-humidity range. And we've found, too, how air conditioning helps to lower production costs.

That's a preview of your air conditioning of the future. It's coming—definitely—because the kind of equipment that will make it possible already has been installed, tested, proved in war-industry applications. Investigate! Write—*General Electric Company, Air Conditioning and Commercial Refrigeration Divisions, Section 443, Bloomfield, New Jersey.*

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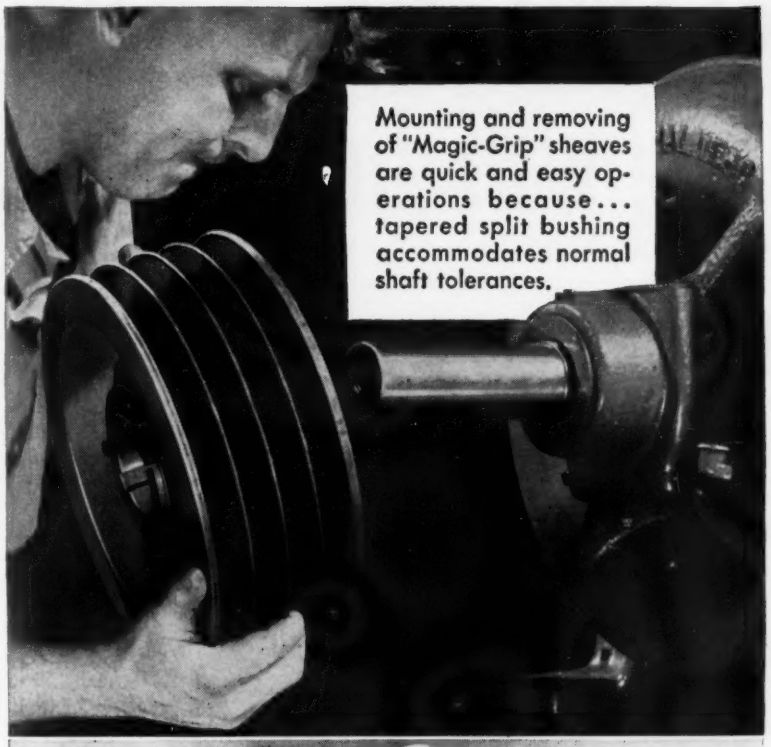
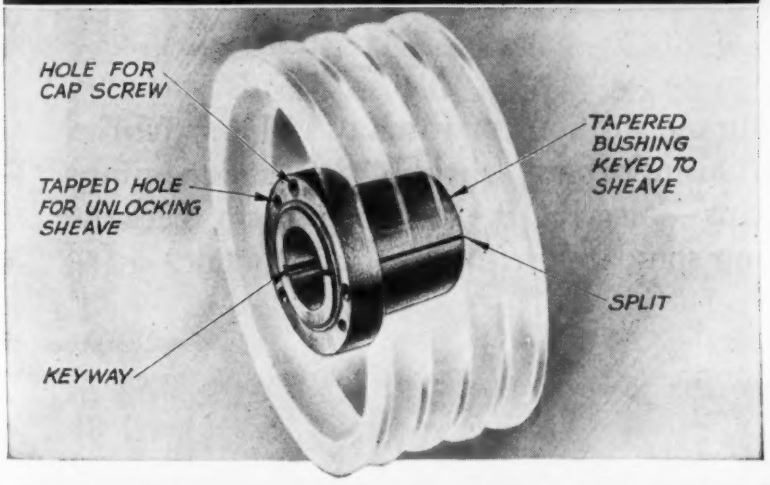
Hear the General Electric Radio Programs: The "G-E ALL-GIRL ORCHESTRA" Sundays, 10 p. m., EWT, NBC..."THE WORLD TODAY" News, Every Weekday, 6:45 p. m., EWT, CBS

It saves you Man-hours and Money because it "Grips like Magic!"


Mounting and removing of "Magic-Grip" sheaves are quick and easy operations because... tapered split bushing accommodates normal shaft tolerances.



Allis-Chalmers' new "Magic-Grip" Sheave locks to shaft in one easy operation, mounts faster than any other sheave on the market. It helps conserve your motors and machines, too!

THE sheave that "grips like magic" is kind to both shafts and bearings. Its positive clamp fit allows sheave to be changed as often as desired without injury to shaft or itself. And the new design of "Magic-Grip" permits sheave to be mounted closer to motor . . . increasing bearing life by reducing shaft overhang.

You get smoother running performance, too, because the new "Magic-Grip" sheave is perfectly centered when installed on shaft.

Allis-Chalmers "Magic-Grip" is assembled and mounted as a unit, assuring true alignment. Its split-bushing feature allows for over- or undersized shafts . . . making it possible for *anyone* to mount or demount sheave easily.

And you get all these advantages at *no increase in price.* Now, more than ever, it pays to make Allis-Chalmers your "V-Belt Drive Headquarters."

"Magic-Grip" sheaves are stocked in a complete line. For full data, ask our district office or dealer for B6310. Or write ALLIS-CHALMERS, MILWAUKEE 1, WIS.

A 1683

Allis-Chalmers Texrope

"MAGIC-GRIP" SHEAVES

Lessons WE learned will help solve

KOPAN ★

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THE PERMANENT CELLULOSE FINISH

Plants turning out millions of yards of military fabrics — head nets, mosquito bars, "shrimp" nets, collar-linings and other items — use KOPAN to help them meet the exacting standards set by the government.

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KOPAN — imparts permanent finish . . . increases tensile strength and abrasion resistance . . . controls shrinking and stretching . . . eliminates slippage . . . improves hand and appearance . . . produces lint-free fabrics.

in this war
YOUR peacetime sales problems

• KOPAN opens the way to new sales outlets and greater profits in the merchandising of fabrics for civilian use.

And Now . . . A Permanent Antiseptic Finish

KOPAN, the permanent cellulose finish, when combined with an approved mildew-and-bacteria resistant formula, produces a *permanent* antiseptic finish. Not only this combination but the addition of Celludye pigment colors . . . are all applied in a single bath operation! No better time than *now* to prepare for after-war merchandising by consulting our technical department as to what KOPAN can do for *your* product.

KOPAN is a vital factor in finishing many types of woven and knitted fabrics . . . sheetings, shirtings, marquisettes, damasks, napery, towelings and rayon. Really revolutionary effects are being attained in the finishing of rayon, particularly.

HART PRODUCTS CORPORATION

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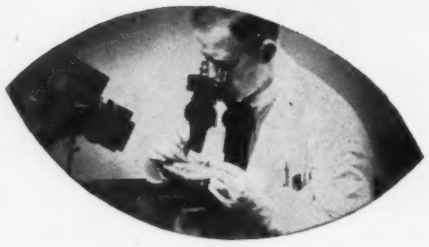
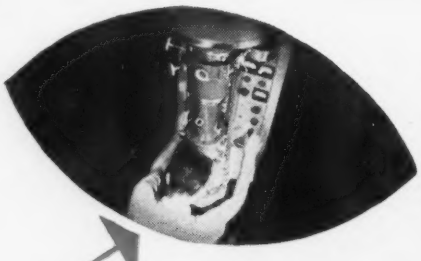
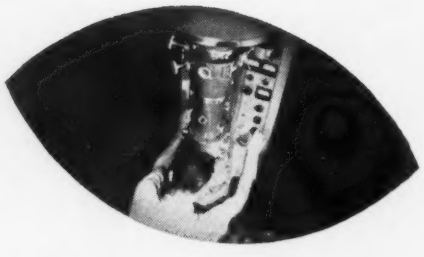
Chemicals for Every Phase of Textile Processing

three ways of looking at textiles







HERE are three instruments for delving into the inner mysteries of textiles which are in every-day use at Monsanto laboratories — an optical microscope, an X-ray camera and an electron microscope.

In the search for new ways to produce *better* textiles at *lower* costs, each is essential.

For example, you might be working with Monsanto's textile specialists toward a cotton fabric that will survive repeated laundering. Your basic problem, therefore, will be to prevent degradation of the cellulose fibres during chemical processing of your yarn and fabric so that they will not be easy victims to oxidation in the laundry.

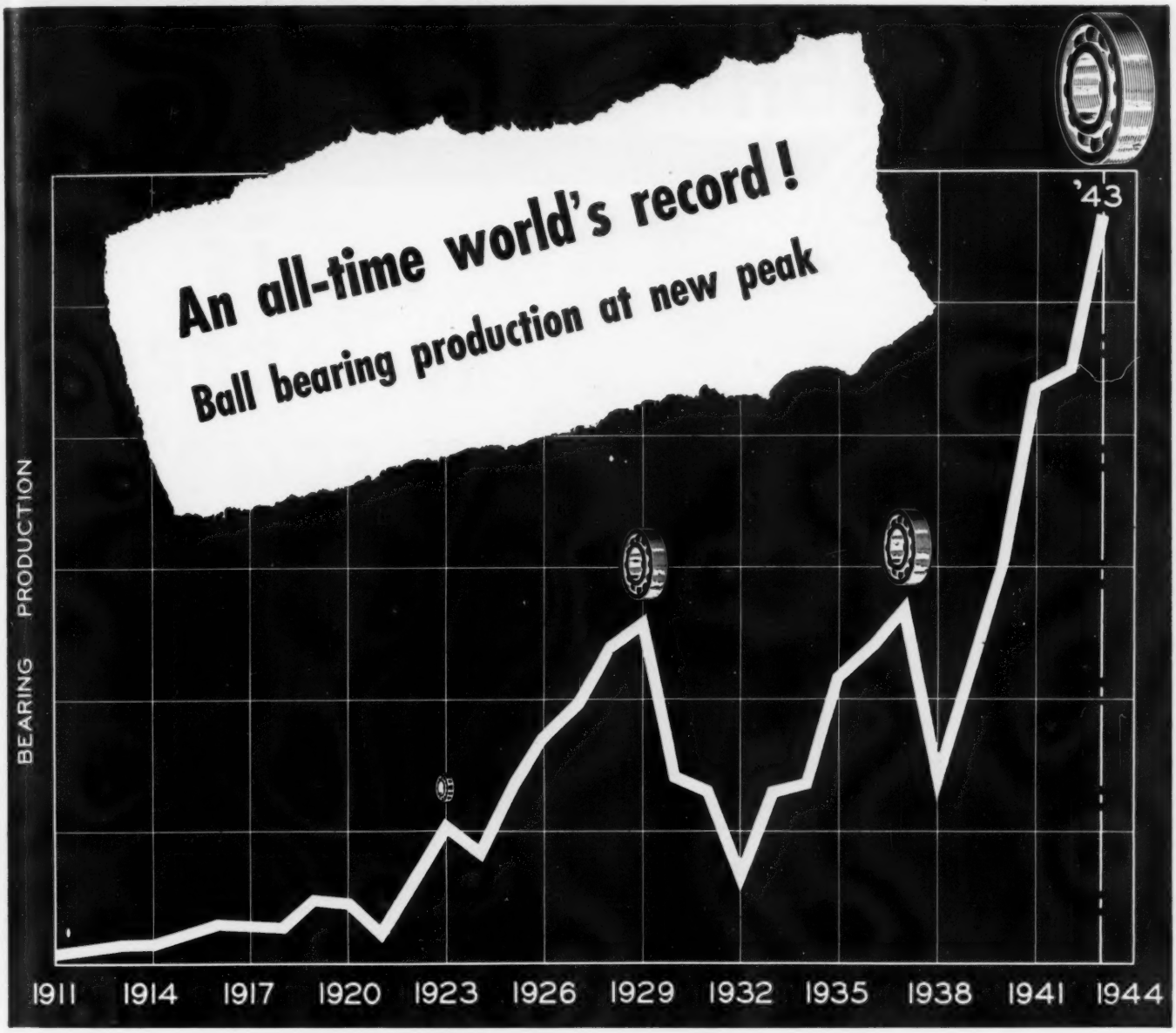
For clues to the mechanical effect of your processing on a single fibre, we will go to the optical microscope. For clues to what may have happened to the basic molecular pattern of the fibre, we will want to check its X-ray diffraction pattern. Finally, for details of particles finer than fibres, we may find the electron microscope invaluable, with its ability to define objects as small as 1/5,000,000th of an inch in diameter.

It is out of lessons learned with just such basic research tools as these that tomorrow's harder-wearing, better-looking fabrics will come . . . which helps to explain why it pays *today* to work on *your* particular problems in partnership with a well-equipped team of textile chemical specialists like Monsanto's. MONSANTO CHEMICAL COMPANY.

Divisions cooperating in Monsanto's integrated research and technical service program for the textile industry: Organic Chemicals Division, St. Louis; Plastics Division, Springfield, Mass.; Phosphate Division, St. Louis; and Merrimac Division, Everett Station, Boston, 49. Inquiries should be addressed to Merrimac Division.

MONSANTO
CHEMICALS AND PLASTICS

The Textile
SERVING INDUSTRY . . . WHICH SERVES MANKIND



● Just because the world can not get enough of them, it is no sign that something has not been done to meet this terrific trend to ball bearings.

This record by the world's largest maker of ball bearings is best expressed by this startling statement:

In the last two months of 1943, New Departure made more ball bearings than during the whole four years of World War I.

This emphasizes the importance of ball bearings in the war at home and abroad—and the super-human efforts that are being exerted to supply them. It also indicates the growing realization by all of the advantages of ball bearings, wherever shafts turn—

1. Make for a compact design.
2. Maintain accurate location of shafts.
3. Give longer machine life.
4. Cut down maintenance.

Add to half a century of experience the ability to produce and you have one reason why New Departure Ball Bearings should be your choice for future use.

A New Departure engineer is your shortest route to bearing satisfaction.

NEW DEPARTURE
DIVISION OF GENERAL MOTORS
Bristol, Connecticut

NEW DEPARTURE

BALL BEARINGS

• • • Nothing Rolls Like a Ball • • •

THE RIGHT COMBINATION

INSTALLATION OF MODEL "E" WOOL SPINNING FRAMES AND WHITIN-SCHWEITER WINDERS AT ST. MARY'S WOOLEN MFG. COMPANY, ST. MARY'S, OHIO.

. . . is no longer a secret

For a long time, mill men have been trying to find a way of combining the many known advantages of large package wool spinning with an economical rewinding process that would produce perfect loom bobbins.

And now it's here — at your service!

We have teamed Whitin's Model "E" Wool Spinning Frame, a headliner in its own right, with the improved Whitin-Schweiter Automatic Filling Bobbin Winder, another top-notch unit, to give you the combination you have been waiting for to produce high quality, economical filling.

St. Mary's Woolen Mfg. Company of Ohio, makers of the famous St. Mary's Blankets, were among the first of many progressive mills to realize the merits of this unusual combination.

Remember — Each unit is a proven product — Every combination is doubly effective.

ELEVEN FILLING BOBBINS REWOUND DIRECTLY FROM EACH TWENTY OUNCE FRAME BOBBIN.

Let's take a look at the FEATURES

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1. Less floor space
2. Higher Productions
3. Simplified Operation
4. Larger Packages for Rewinding
5. Improved Quality of Yarn

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1. Individual Spindle Control
2. Automatic Doffing of Loom Bobbins
3. Continuous Winding from Magazined Creel Bobbins
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5. Wind any Size Loom Bobbin

WHITIN MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS, U. S. A.

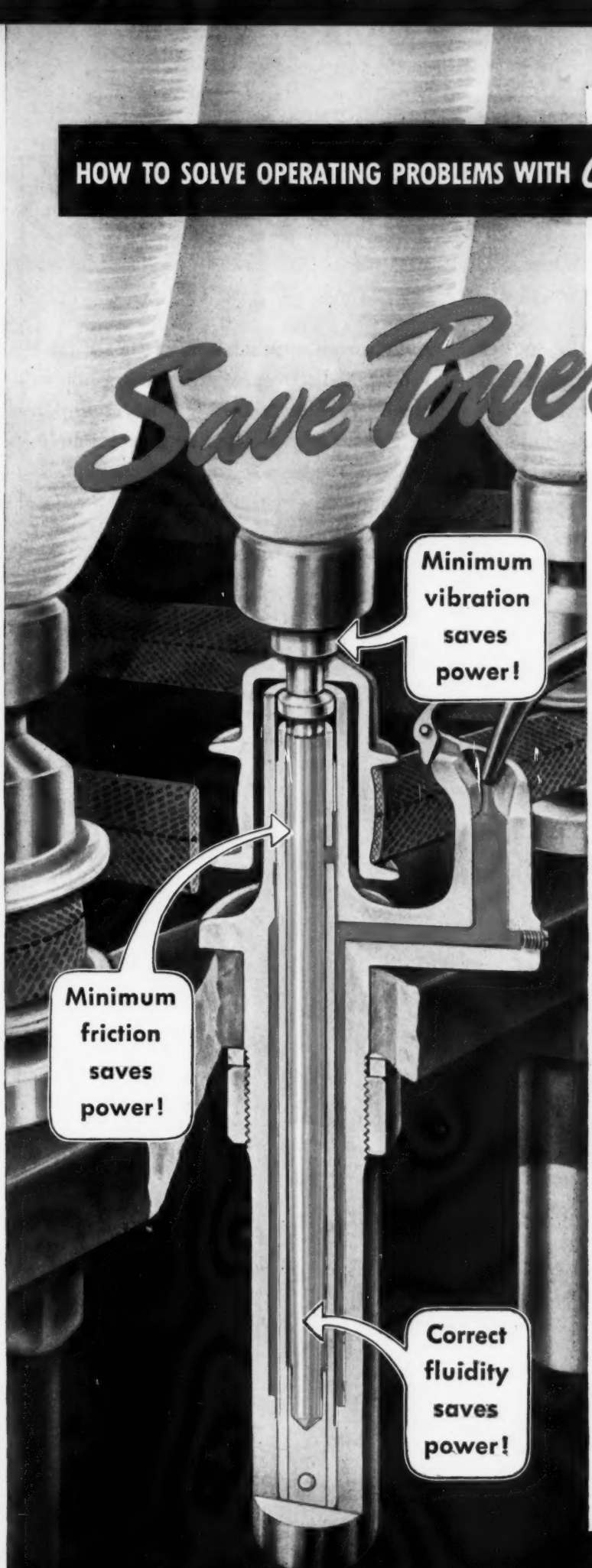
CHARLOTTE, N. C. ATLANTA, GA.

ONE OF A SERIES OF SUGGESTIONS TO AID PRODUCTION

HOW TO SOLVE OPERATING PROBLEMS WITH *Correct Lubrication*

Save Power Here—

and multiply your savings many times!



YOUR SPINNING DEPARTMENT consumes over half the power used in your mill. Savings in power here—at each individual spindle—mean more than anywhere else. For they are multiplied many times.

Many mills, realizing this, have made exhaustive studies of spindle oils. Time after time, when this has been done, Gargoyle Velocite Oils proved far superior to others.

These quick-acting oils distribute instantly through small clearances. Their strong films resist rupture and reduce running friction. Yes, and they resist the formation of gummy deposits, which cause spindle drag.

Get Gargoyle Velocite Oils in your spindles. Multiply your savings with reduced power consumption, lower maintenance costs, improved production and lower lubrication costs.

SOCONY-VACUUM OIL CO., INC., Standard Oil of New York Div., White Star Div., Lubrite Div., Chicago Div., White Eagle Div., Wadhams Div., Magnolia Petroleum Co., General Petroleum Corp. of California.

GARGOYLE
Lubricants

ONE OF A SERIES OF SUGGESTIONS TO AID PRODUCTION

CALL IN SOCONY-VACUUM

Advertising to

"The more women at war, the sooner we'll win" . . . that is Uncle Sam's official message to every woman who can take a job. Tubize is again putting its national advertising behind that message.

In normal times, Tubize advertising built up an appreciation of Rayon, and established a respected buying guide in the Tubize Certified Quality Label... in the eagerly awaited future this helpful, constructive selling advertising will continue.

"tell them that in time of war,
PATRIOTISM IS NOT ENOUGH!"
Edith Cavell 1915
It is the night of October 11, 1915...in the prison of St. Giles, Brussels.
Nurse Edith Cavell awaits her execution by the Germans at dawn.
The British chaplain beside her asks, "Have you a last word for the women of your country?"
"Yes," her voice speaks strongly. "Tell them that in time of war, Patriotism is not enough!"
* * *
Today, American women understand the terrible truth of this message. Patriotism, love of country, the will to win, is not enough. So millions have willingly put aside their everyday lives, and are hard at work with their own two hands to speed the end of this holocaust.
But many more women are needed!
There are thousands of jobs open. Civilian jobs in transportation, communications, education, nursing. War jobs in localities where factories are producing military equipment. And for the women who want to stand shoulder to shoulder with their men in this war, there are the Waves, Wacs, Spars and Marines.
Remember: The more women at war, the sooner we'll win!
Look in the want ads for the kinds of jobs open in your community. Go to your local U. S. Employment Service office for advice —or to the nearest Army or Navy recruiting office, or Office of Naval Officer Procurement.
War work for women is so important—and covers such a wide field, that we felt a booklet giving authoritative information would be a great help. So we gathered facts from every possible source and summed them up in the little pamphlet "Where am I needed most?" It is carefully planned to help you find the war job you are best suited for. Send coupon today.
* * *
Whatever war work you do, may we ask one thing more. Rayon is important in military and economic warfare. So that it may continue to serve you at home as well, we ask you to buy carefully, to look for known quality labels and to conserve according to directions.
TUBIZE RAYON CORPORATION, 3 Park Avenue, New York 16, N. Y.
Please send me booklet "Where Am I Needed Most?"
NAME
ADDRESS
Published in cooperation with War Advertising Council, War Manpower Commission, and Office of War Information by Tubize Rayon Corporation, 3 Park Avenue, New York 16, N. Y.

This advertisement will appear in:

LIFE	April 17
GOOD HOUSEKEEPING	April
VOGUE	April 15
HARPER'S BAZAAR	April
MADEMOISELLE	April

A combined circulation of more than SEVEN and a HALF MILLION.

Prepared in cooperation with the War Advertising Council, War Manpower Commission and Office of War Information.

TUBIZE RAYON CORPORATION
Acetate and Viscose Rayon Yarns and Fabrics

help speed Victory

Now there is the war to win, and the greatest service advertising can do for you is to increase and stabilize woman-power, for your mill, your store, your community, your armed forces.

PUT YOUR INFLUENCE behind this "Advertising to Help Speed Victory"—to make it more effective in your own town, your store, your mill. Give localized, personalized extra power to this vital Government message. Use coupon for free material.

A *Advertisement for your local papers...it ties in with the powerful national advertisement. Mat free on request.*

B *As seen in* **LIFE**, *card and poster to display in store or factory—free on request.*

C *Booklet "Where Am I Needed Most?"...a guide to women...use as envelope enclosure or on counters...How many can you use?*

LIFE
....news...pictures...famous products
"tell them that in time of war,
PATRIOTISM IS NOT ENOUGH!"
Edith Cavell 1915
B
WHERE AM I NEEDED MOST
a guide to your war job
C
"tell them that in time of war,
PATRIOTISM IS NOT ENOUGH!"
YOUR OWN MESSAGE AND NAME HE
A
Paste Coupon on Post Card
TUBIZE RAYON CORPORATION · 2 Park Ave., New York 16, N.Y.
Please send me (check)
☐ Display card and poster
☐ Mat of local newspaper ad
☐ Booklets. Quantity.....
Name.....
Address.....

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK, N. Y.

Telephone: AShland 4-8650

FACTORS

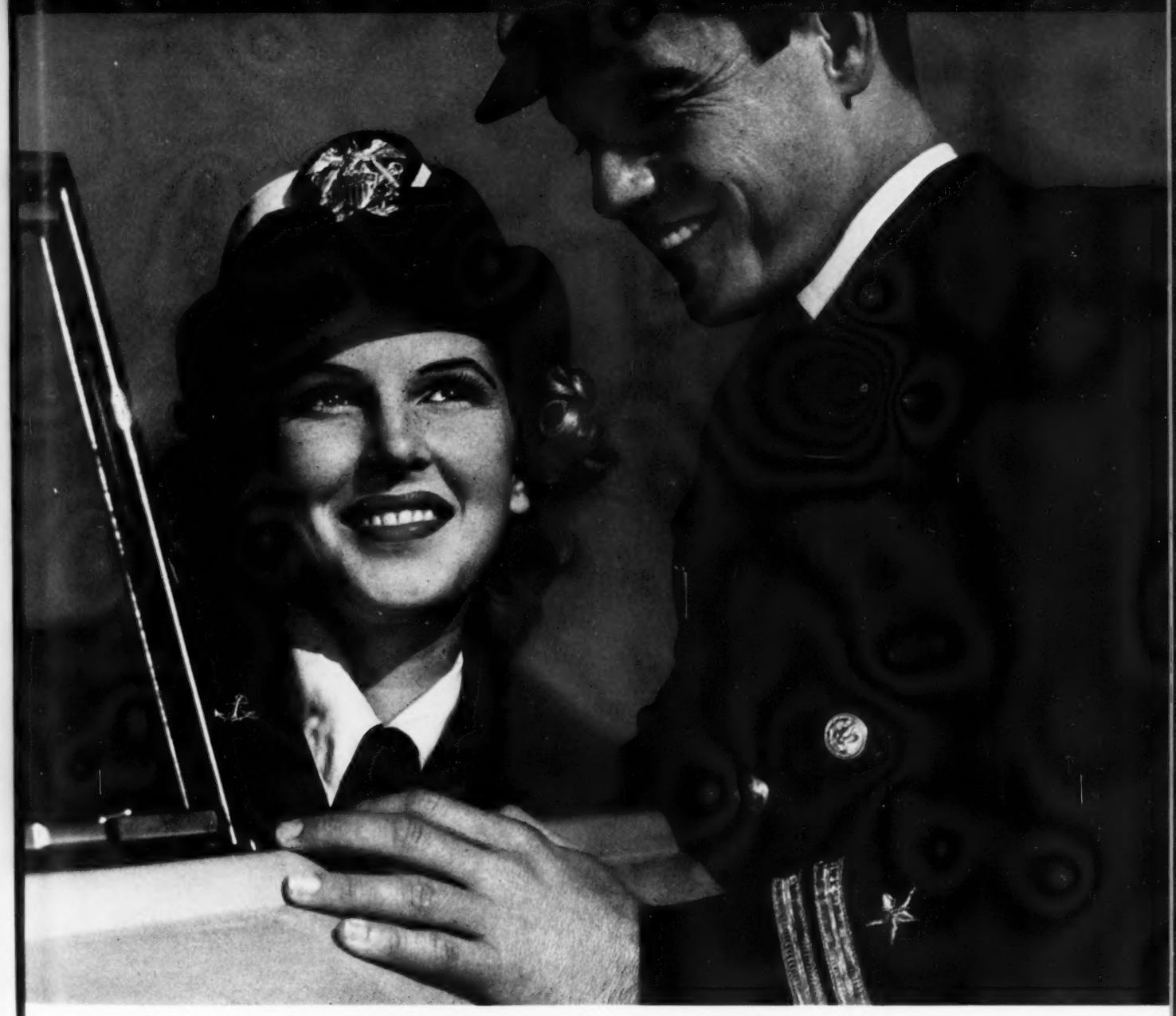
For Manufacturers and Merchants

Inquiries as to our services solicited

●

ESTABLISHED 1840

SANDOZ PRESENTS *The color achievement of the month*



PRINCETON'S *Deep-Ocean Blue* FOR WAVES

There's one color that's "Fashion-first" for thousands of young women as our country swings into its third year of the war.

It's WAVE-blue, picked right off the Star-Spangled Banner for the uniforms of the Women's Appointed Volunteer Emergency Service.

Sandoz, always sensitive to the swings of style, was early in concentrating a good part of its production of acid and chrome dyes on colors that meet the services' requirements . . . and now serves many leading manufacturers like Princeton Worsted Mills who in turn serve the fabric needs of the men and women in uniform.

It will pay you to become familiar with other Sandoz accomplishments in acid and chrome dyes for woolens, and other lines for cottons and synthetics. For instance, a recent Sandoz achievement for cotton goods is CEROL TGI, a combined waterproofing and mildewproofing agent of extreme stability, which ends the danger of delays in reprocessing. Non-toxic; suitable for garments worn next to the skin.

Application laboratories are maintained in New York, Boston, Philadelphia, Charlotte, Los Angeles and Toronto; stocks are carried in these cities. There are also Sandoz branches in Chicago, Paterson and Providence.

Watch for another Sandoz "Color Achievement of the Month"—saluting another Sandoz customer among the leaders of the Textile Industry. It will appear next month.

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N. Y.

SANDO *thinks ahead with textiles* SANDOZ

● *Built by* WHITIN MACHINE WORKS

Uniforms come from here

SKF

BALL AND ROLLER BEARINGS

Many of the uniforms the boys wear . . . the blankets they sleep under . . . the flags they carry come from woolen and worsted mills where this Whitin-Schweiter Automatic Filling Bobbin Winder works. Where nine SKF Ball Bearings bring smooth-running and correct alignment to rotating parts inside each spindle unit. Where the spindle head, main driveshaft, bobbin bolder, oscillating shaft, feeler wheel and the main driveshaft arm start easily, turn almost effortlessly throughout a long life. Where textile machines manufacture fabrics for the armed forces, the bearings invariably are SKF's. 5518

SKF INDUSTRIES, INC. • FRONT ST. & ERIE AVE. • PHILADELPHIA 34, PA.

FEWER ROLL CHANGES . . . MORE POUNDAGE . . . BECAUSE CORK IS *Tough!*

YOU can get out more poundage with Armstrong's Cork Cots, because their *long service life* reduces the frequency of roll changes. One reason is that these cots are tough. They run for a long time without "hollowing out." And, because they are extraordinarily resilient as well, Armstrong's Cork Cots are highly resistant to grooving by hard ends. Another reason is that these cots have a velvety-smooth spinning surface, which helps prevent top roll lapping. All three qualities —toughness, resilience, and smoothness—combine to keep each roll operating at peak efficiency.

What's more, after a long initial service life, Armstrong's Cork Cots can be rebuffed—made like new—three or four times. Each cot thus gives four to five service lives!

In addition to long service, cork gives you *better running work*. Because of cork's high coefficient of friction, Armstrong's Cork Cots produce more uniform drafting, with a minimum of slippage. There's less clearer waste, and eyebrowing is eliminated. You get a true drafting surface, too, for cork does not "flow" under pressure.

For the full story of how Armstrong's Cork Cots can help you get better running work and more poundage, write today to Armstrong Cork Company, Textile Products Section, 8303 Arch Street, Lancaster, Pennsylvania.

BETTER RUNNING WORK — MORE POUNDAGE

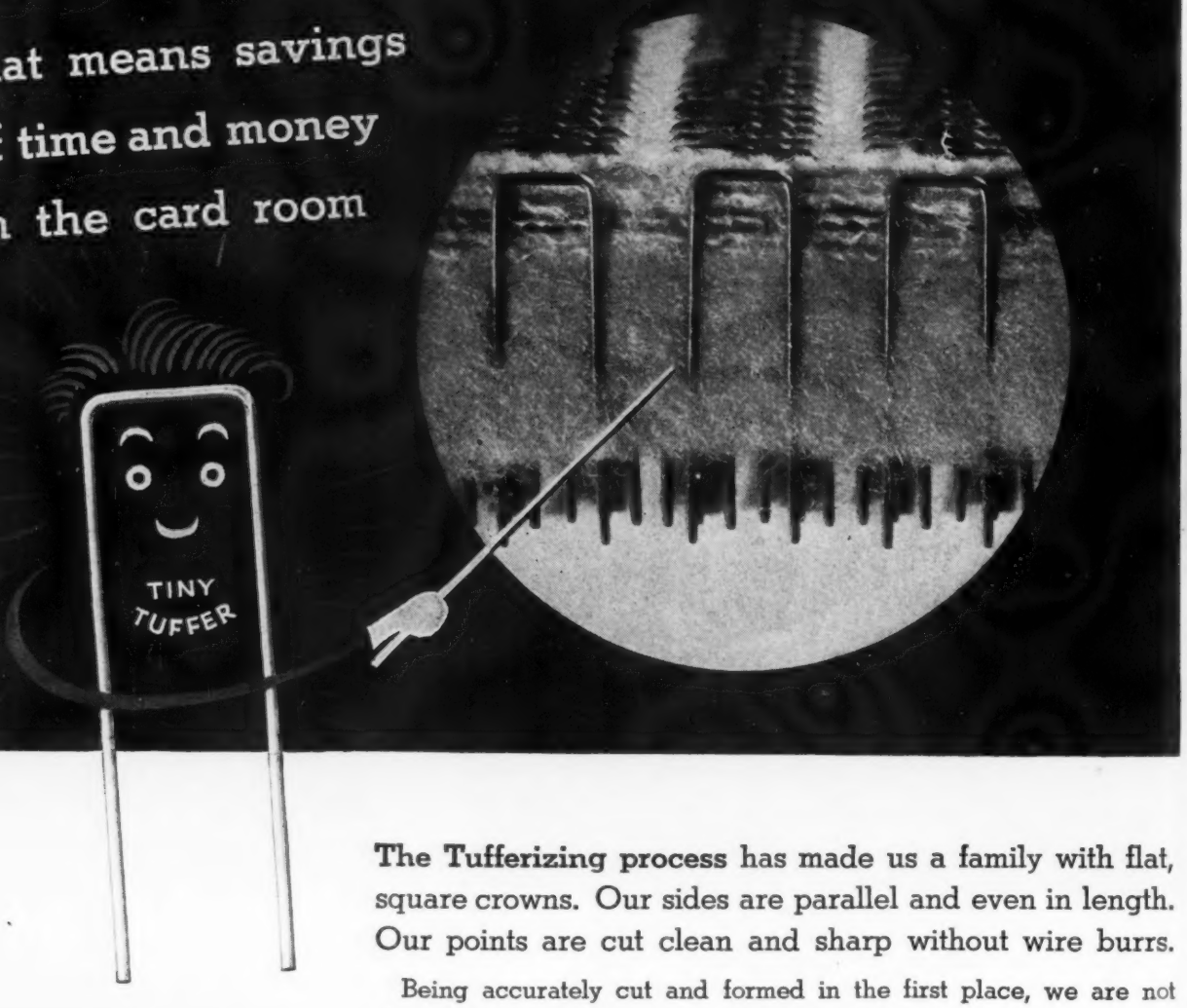
ARMSTRONG'S CORK COTS

ACCOTEX COTS* • ACCOTEX APRONS*

* SYNTHETIC RUBBER

It's "TUFFERIZED"

that means savings of time and money in the card room



The Tufferizing process has made us a family with flat, square crowns. Our sides are parallel and even in length. Our points are cut clean and sharp without wire burrs.

Being accurately cut and formed in the first place, we are not robbed of temper by excessive grinding to get us in shape to go on your cards. Our flat, square crowns nestle snugly between the cylinder and foundation so you can draw us up smoothly and evenly. Our sides remain parallel and our points stay in position at all times.

This means easier stripping, less grinding, longer life, better carding. You can't do better than to *standardize on Tuffer products.*

TUFFER CARD CLOTHING

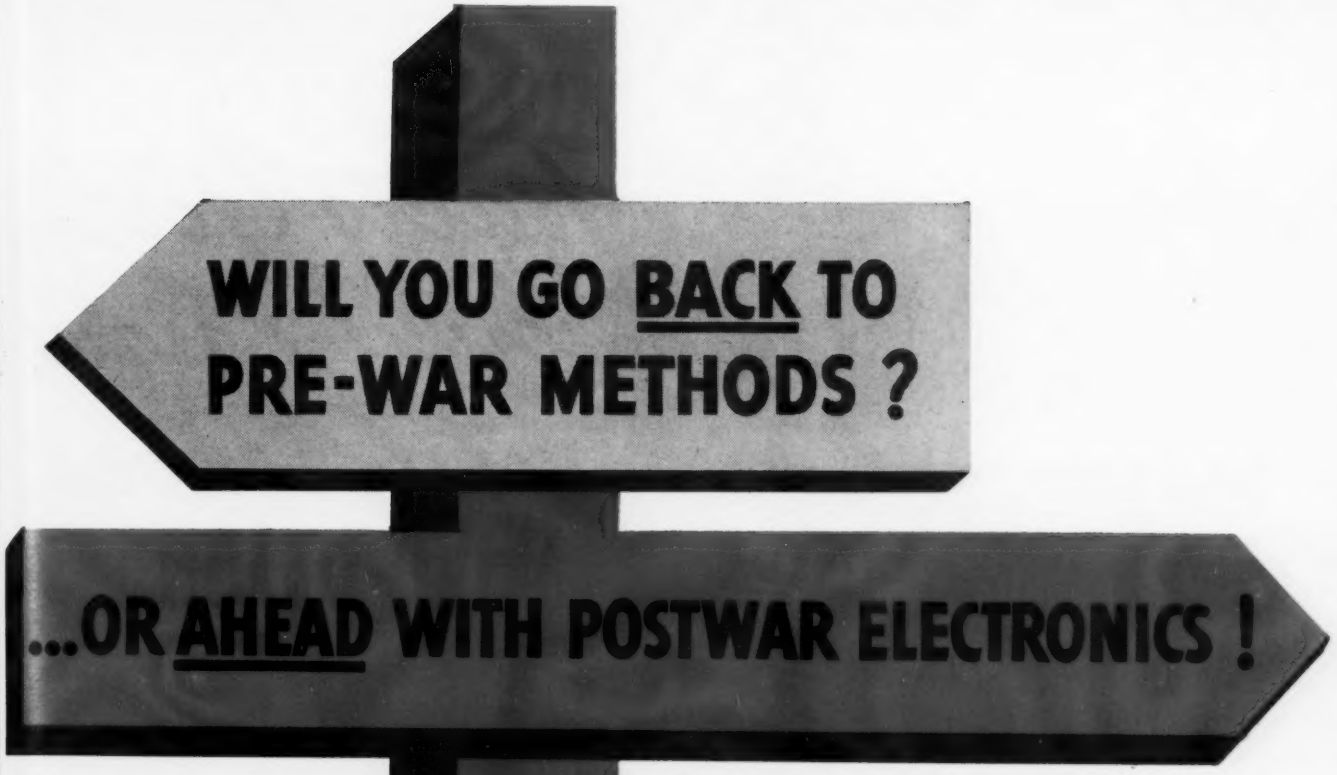
TUFFER PRODUCTS

Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Recovered and extra sets loaned at all plants. Lickerins and Garnet Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant • Midgley Patented, and Howard's Special Hand Stripping Cards • Inserted Eye & Regular Wire Heddles

HOWARD BROS. MFG. CO.

WORCESTER, MASSACHUSETTS

Southern Plants: Atlanta, Ga., Gastonia, N. C. **Branch Offices:** Philadelphia, Dallas **Canadian Agents:** Colwool Accessories, Ltd., Toronto 2



● What was the last word in production processes before Pearl Harbor will be far outdistanced when Peace returns. For industry has had its *pace* lifted . . . by electronics. And, through the proper application of electronics, *your* business will be ready when the war is won to produce better goods in less time at lower cost.

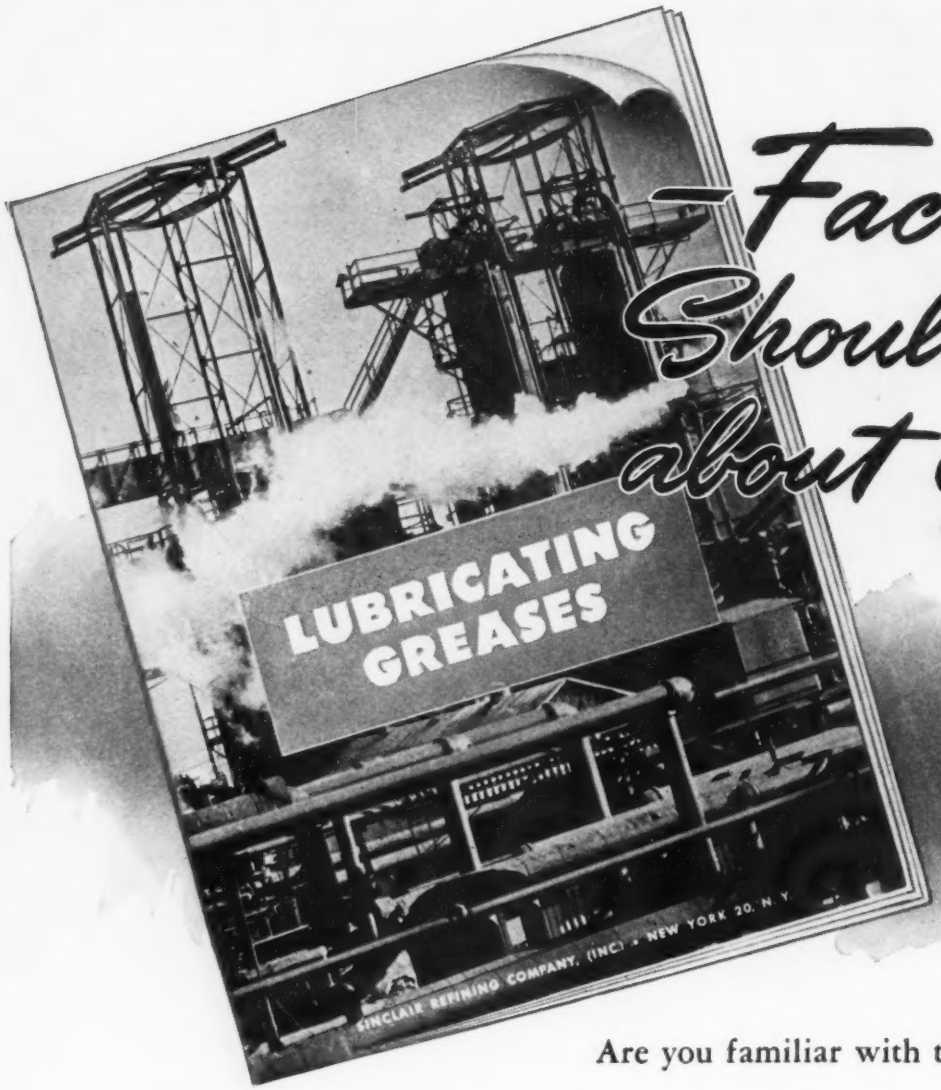
General Electronics Industries, one of the largest organizations specializing in electronics, is prepared now to design or develop the electronics applications that will meet your postwar requirements. Thus you will gain valuable time in the future conversion of your plant to peacetime production . . . because General Electronics Industries will be all set to supply your pre-determined electronics needs, as soon as its manufacturing facilities are no longer engaged in all-out war effort.

Why wait any longer? Write to Engineering Department, General Electronics Industries, 342 West Putnam Avenue, Greenwich, Connecticut.

GENERAL *Electronics* **INDUSTRIES**

TRADE-MARK REG. U.S. PAT. OFF.

GREENWICH • STAMFORD • BRIDGEPORT • NEW MILFORD • NEW YORK



Facts You Should Know about Greases

Are you familiar with the composition of lubricating greases? . . . . . Do you know the different grease types . . . their virtues . . . their weaknesses? . . . . . Are you informed about proper selection and correct application?

This and other information, vital to every industry, is contained in "Lubricating Greases," a new Sinclair brochure published by America's outstanding manufacturer of lubricants.

"Lubricating Greases" by text and chart furnishes you with facts essential to higher production and lower upkeep in individual machine or complete plant operation.

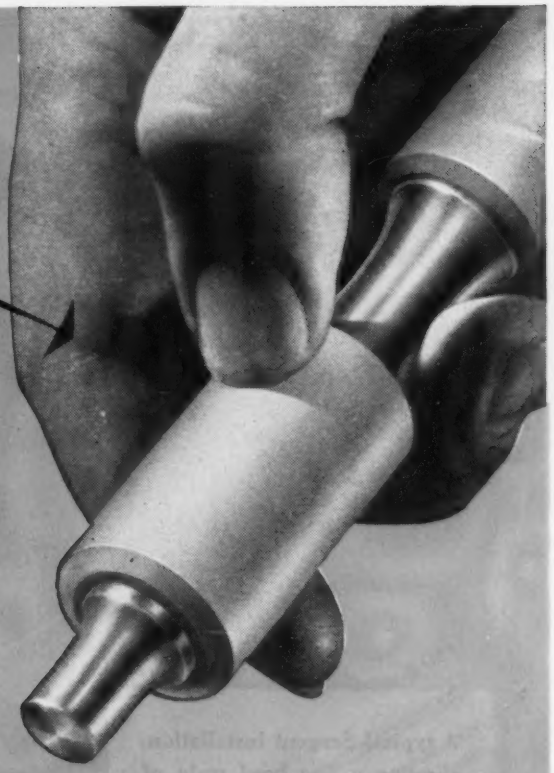
If you are interested in more efficient, more economical lubrication with a greatly reduced inventory of greases you will want a copy of "Lubricating Greases." Write today for a copy—with our compliments.

SINCLAIR TEXTILE LUBRICANTS

FOR FULL INFORMATION OR LUBRICATION COUNSEL WRITE SINCLAIR REFINING COMPANY, 630 FIFTH AVENUE, NEW YORK 20, N. Y.

YOU CAN'T GROOVE

DAYCO *Synthetic Rubber* ROLL COVERINGS



They Last Far Longer...Protect the Yarn... Increase Production

THESE DAYCO FEATURES TELL THE STORY
1. Improved drafting
2. No grooving— less ends down
3. Unaffected by temperature changes
4. Lower net roll costs
5. Longer service life
6. Easy to apply
7. Proper cushioning
8. Not affected by hard ends
9. Static free
10. Oil resisting
11. One-piece tubular construction
12. Produce more uniform yarn

Fingernails can't groove Dayco Synthetic Rubber Roll Coverings. Neither can motes or foreign matter. Extremes of temperature can't affect them and they are completely immune to any deterioration which might injure the yarn. They are so good that at a recent meeting of mill executives, 90% voted Dayco the greatest improvement to more efficient spinning.

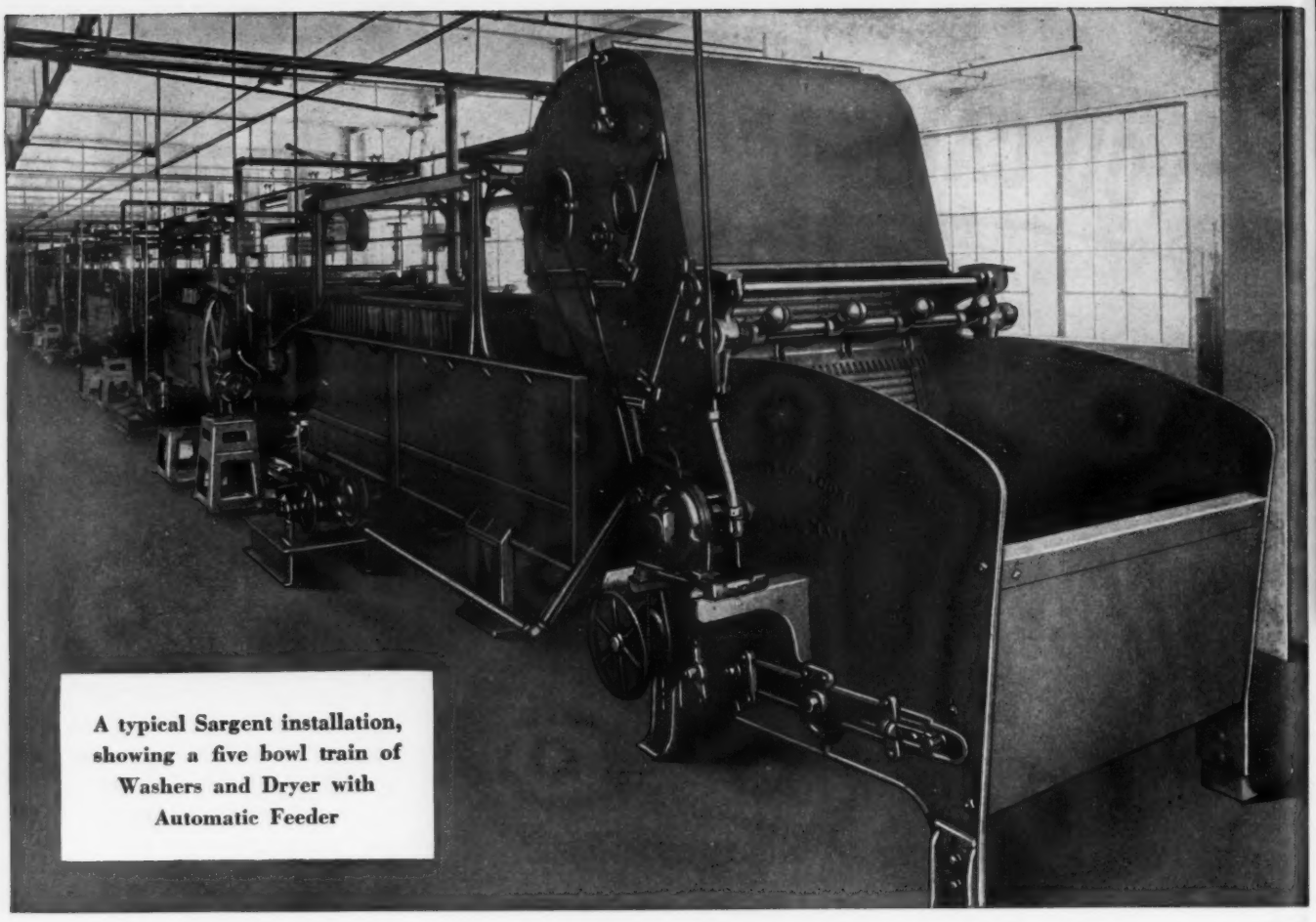
These Dayco Synthetic Rubber Roll Coverings are the direct result of Dayton Rubber's years of research and experience in the development of synthetic rubber products. Change to Dayco and you'll get *more* uniform yarn at less cost per month of use.

LET'S ALL BACK THE ATTACK WITH WAR BONDS

THE DAYTON RUBBER MANUFACTURING CO.
Dayton 1, Ohio • Waynesville, N. C.
Famous DAYCO Synthetic Rubber Products Since 1934
MAIN SALES OFFICE: Woodside Bldg., Greenville, South Carolina

Roll Coverings by **Dayton Rubber**

REG. TRADE MARK THE DAYTON RUBBER MFG. CO.

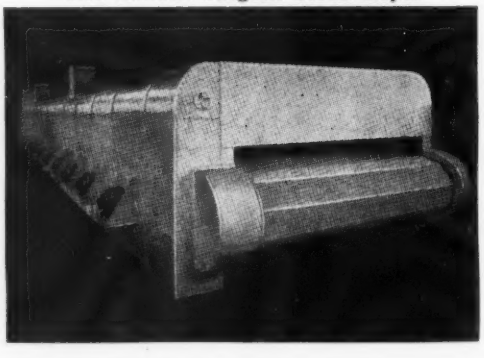


A typical Sargent installation, showing a five bowl train of Washers and Dryer with Automatic Feeder

Ushering in the NEW in "New Era"

THAT is just what the Textile Industry is experiencing when the latest types of SARGENT Preparatory Machinery are installed, because, wherever this is done, there is more *efficiency,* higher *speed,* less *waste* motion, larger *production* and greater *profits* • The Industry absolutely *needs* the *newest* SARGENT Units in order to produce the proper quality and fill the orders *on time* • For more than 88 years SARGENT has received unending recognition as specialists in Wool Scouring, Stock Drying and Picking Equipment, and its numerous fast-working Units are in daily operation in thousands of textile plants throughout America and foreign countries • There are various illustrated Bulletins available which visualize all the Sargent products, and all you have to do is *write for them!*

The famous Sargent Stock Dryer



C. G. SARGENT'S SONS CORPORATION
Graniteville, Massachusetts, U. S. A.

Creative Chemistry at its best . . .

"To describe the task of the chemist who creates new products out of neglected raw materials, Dr. Edwin E. Slossen coined the name Creative Chemistry. No more shining example of Creative Chemistry at its highest and best can be found than the proud record of accomplishment of Hercules Powder Company in the field of terpene and rosin chemistry."

DAVID DIETZ, *Science Editor of the Scripps-Howard Newspapers, Author, Pulitzer Prize Winner*

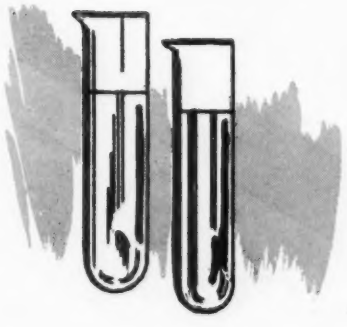
A TWENTY-FIVE YEAR TASK

"Twenty-five years ago Hercules launched its researches into wood rosin, wood turpentine, and pine oil—materials that the industrial world had neglected and ignored. Over the years, Hercules built an outstanding research and technical staff, one of the world's important laboratories, and maintained the courage to risk millions of dollars in development work and new plant facilities."

WHAT HERCULES HAS ACHIEVED

. . . with Rosin

From unstable, dark, wood rosin, Hercules chemists created superior pale rosins; they then stabilized these rosins by both hydrogenation and polymerization; they developed a large number of other purified, tailor-made rosins and rosin esters for hundreds of specialized purposes.



. . . with Turpentine

From crude wood turpentine Hercules chemists uncovered a whole new series of useful terpene chemicals. They achieved the first synthetic production of para-cymene. They created alpha pinene for the synthesis of camphor, and introduced many new bases for alkyds and terpene alcohols.

. . . from Pine Oil

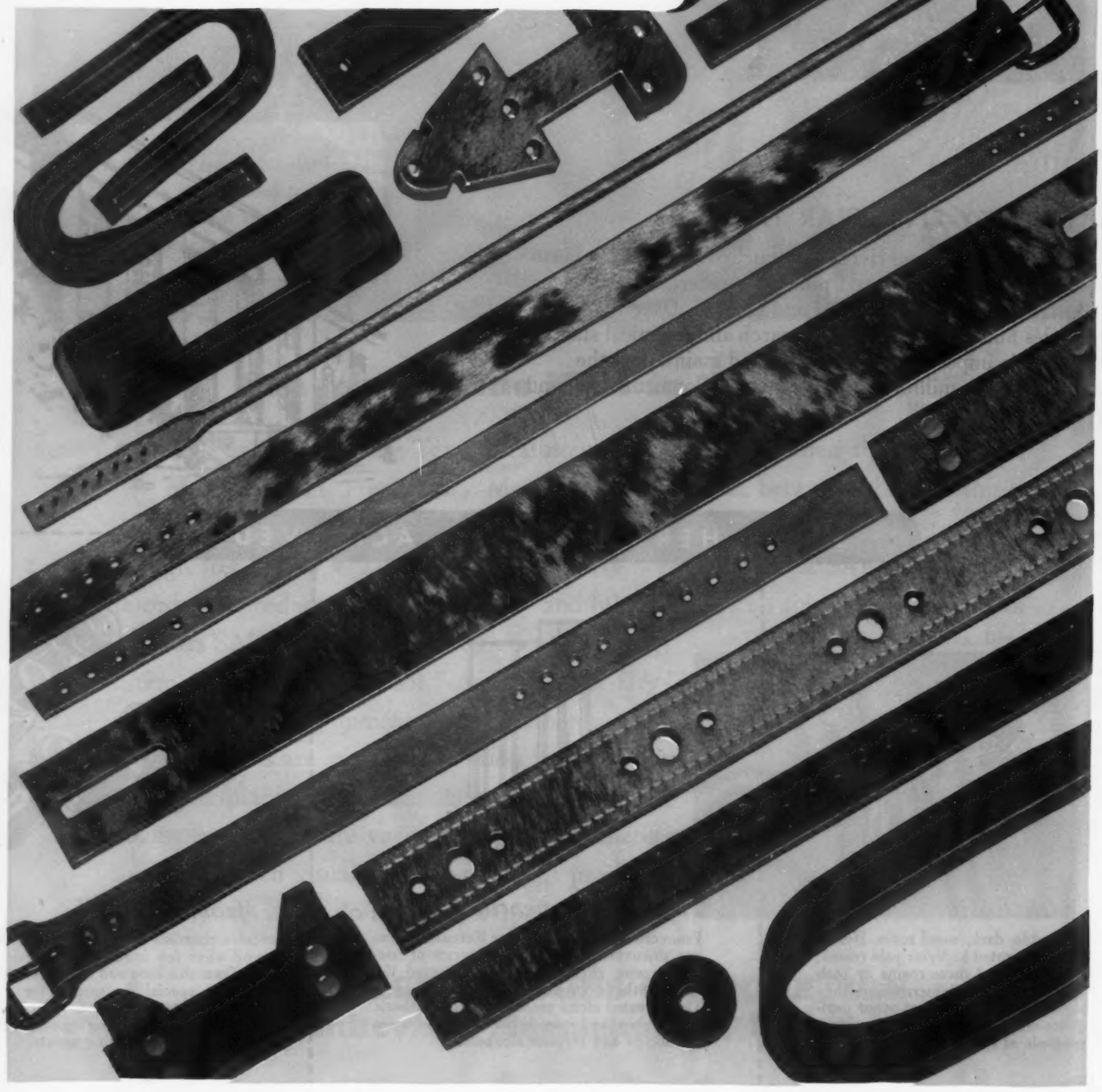
Hercules chemists began their studies of pine oil when few industrial uses existed for it. From this long and costly research have come special derivatives for new and better flotation reagents, disinfectants, insecticides, scouring agents, detergent assistants, and wetting agents.

HERCULES TERPENE AND ROSIN CHEMICALS

NI-40

HERCULES POWDER COMPANY, 994 Market Street, Wilmington 99, Delaware

THE ORANGE LINE IS YOUR



LONG - LIFE LINE

because every G&K Hairitan loom leather is Quality-Controlled from Green Hide to Finished Product

HERE'S the kind of long-life service you can expect from Hairitan on your looms:

In a Massachusetts cotton mill, G&K's hairless Hairitan lug straps have given *more than four times* the service life of straps formerly used —and are still not ready to come off the looms.

Hairitan check straps — single thickness — have averaged 5½ months' service life in a Georgia cotton mill working an 80-hour week; straps used previously averaged 2 to 3 months.

In three Southern mills, all running two shifts, Hairitan "2-Fold" Endless Check Straps have had an average life of 8 months or better.

Such performance is why Graton & Knight's ORANGE LINE — all "Hairitan" leather — has developed its present high demand. Hairitan's low stretch, high tensile strength (averaging over 6500 lbs.) and extreme resiliency have convinced users that it is the first domestic tannage equal, in dependability and long life, to the best European-type hair-on leather.

All "Hairitan" products are identified by orange color on the flesh side. Items with hair-off are orange-colored all over.

Make a test of these leathers on *your* looms. We believe results will convince you that specifying the Orange Line will give you longest life, lowest cost per loom. And write us to have your name put on our mailing list to receive further information about Hairitan leathers.

The ORANGE LINE

ONE QUALITY CONTROL FROM HIDE TO LOOM

GRATON & KNIGHT COMPANY

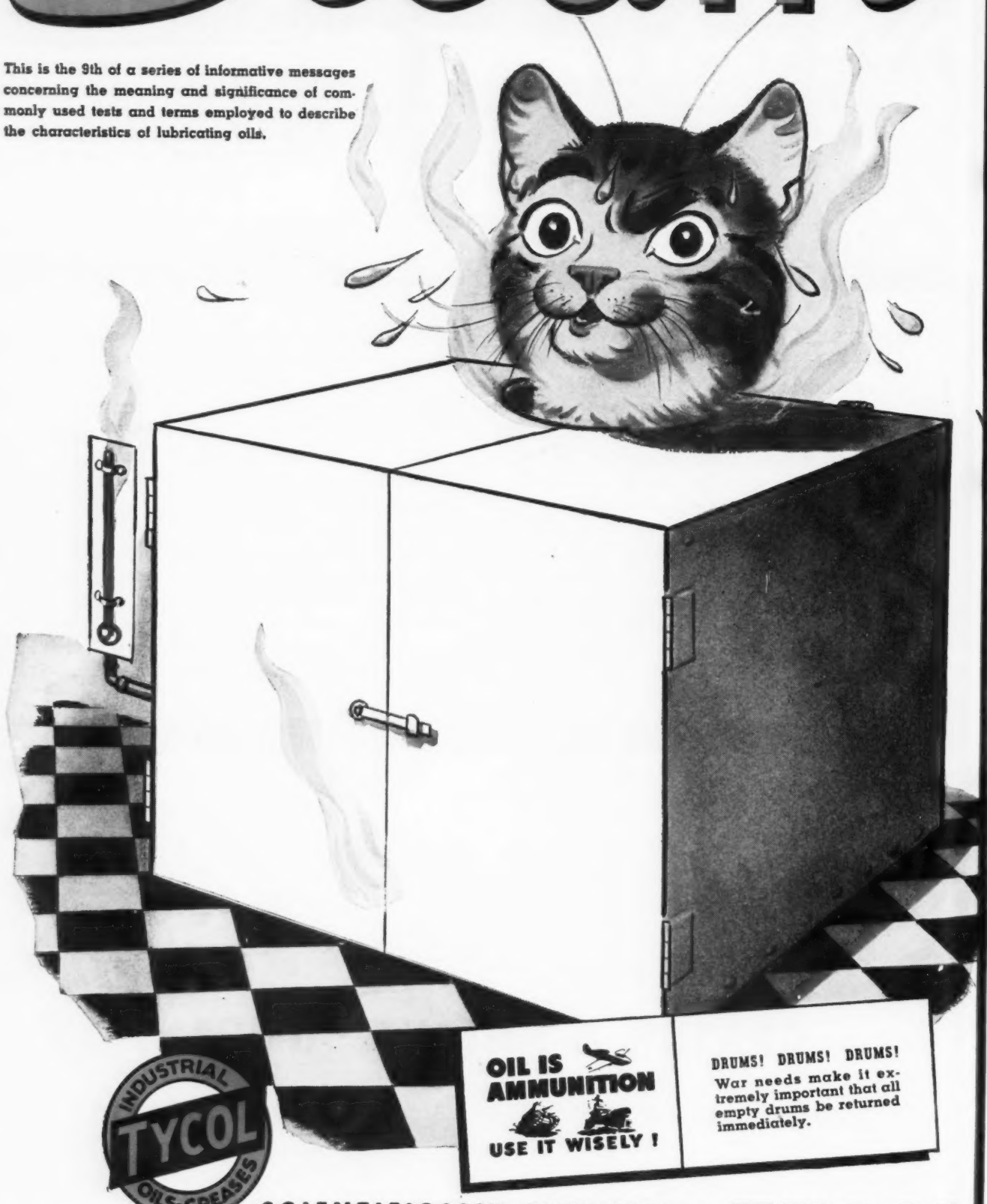
WORCESTER 4, MASSACHUSETTS

GRATON AND KNIGHT

Supplied by the leading distributors to the Textile Industry . . . Look under "Graton & Knight" in Belting section of Classified Telephone Directory or THOMAS' REGISTER. See complete catalog in TEXTILE WORLD YEAR BOOK.

Steam

* This is the 9th of a series of informative messages concerning the meaning and significance of commonly used tests and terms employed to describe the characteristics of lubricating oils.



OIL IS AMMUNITION

USE IT WISELY!

DRUMS! DRUMS! DRUMS!

War needs make it extremely important that all empty drums be returned immediately.

INDUSTRIAL TYCOL OILS-GREASES

SCIENTIFICALLY ENGINEERED FOR EVERY INDUSTRIAL USE TYCOL

emulsion

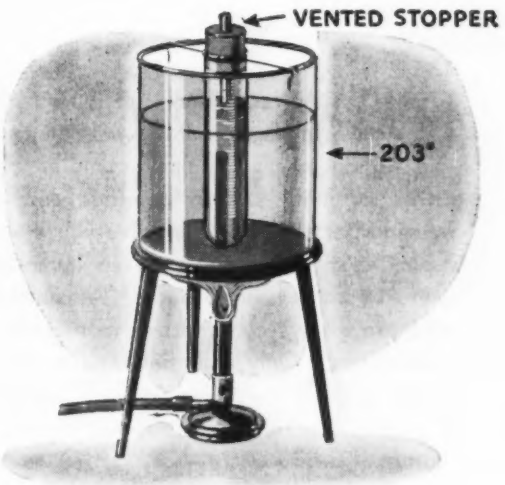
TIDE WATER LUBRICANIA

DEFINITION: The A.S.T.M. Steam Emulsion Number (S. E. No.) is the number of seconds required for an oil to separate when emulsified with condensed steam and separated under definitely prescribed conditions.

TEST: A predetermined volume of the oil is placed in a test tube of prescribed size, which in turn is placed in a bath of water. A steam delivery tube is inserted into the oil extending to the bottom of the container. Steam is passed into the oil at such a rate as to maintain the temperature of the oil at 190-195°F. until the volume of the emulsion of oil and condensed steam is 40 ± 3 ml. The test tube containing the oil is next transferred to a separating bath maintained at a temperature of 200°F. to 203°F. The contents of the oil container is examined every 30 seconds. The time in seconds required for the separation of the 20 ml. of oil is reported as the A.S.T.M. Steam Emulsion Number.

SIGNIFICANCE: (S. E. Number) when applied to an unused oil indicates whether certain compounds (soaps, sulphonates and other emulsifying agents) or contaminants in an oil have been removed in the refining process. Changes in S. E. Number may occur during storage as well as in service. It may be stated that in general, the S. E. Number is not necessarily related to the oil's performance characteristics as a lubricant.

S. E. Number is sometimes included in the specification for certain oils, but there is no uniformity of opinion as to its practical value. This test as applied to used oils may be considered as of little significance.



Tycol lubricants are made from the most suitable materials. They are scientifically refined to meet stringent laboratory specifications and the recommended service requirement. It is this combination that assures the outstanding performance of Tycol Industrial Oils and Greases.

TIDE WATER ASSOCIATED OIL COMPANY

MAKERS OF THE FAMOUS VEEDOL MOTOR OIL • Eastern Division: 17 Battery Place, New York 4, N. Y.

Principal Branch Offices: Boston, Philadelphia, Pittsburgh, Charlotte, N. C.

INDUSTRIAL LUBRICANTS

"AN OUNCE of PREVENTION"

ASHWORTH CARD SURVEYS

—He's preparing for lightning BEFORE it strikes. You can avoid Card shutdowns by using Ashworth Card Surveys to uncover trouble BEFORE it becomes serious!

PRACTICAL card men, members of the Ashworth service staff, will, on request and without charge, make a complete survey of all clothing, chains, bearings and other wearing parts. These men give you a written report that will enable you to immediately spot sources of future trouble. Ashworth card men are always conservative in their recommendations. Only essential repairs are proposed and all card repairs are planned so that they can be budgeted over a period of months if desired.

Dealing with Ashworth assures complete card clothing satisfaction, as their 3 factories, 6 repair shops and 7 distributing points offer uninterrupted supply, prompt repairs and ready availability.

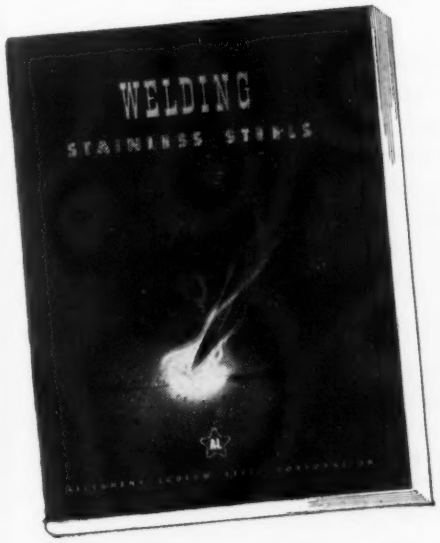
ASHWORTH BROS., INC., Woolen Div., AMERICAN CARD CLOTHING CO.

FALL RIVER*†‡ WORCESTER*‡ PHILADELPHIA*†‡ ATLANTA†‡ GREENVILLE†‡ CHARLOTTE†‡ DALLAS†‡ (Textile Supply Co.)

*Factory • †Repair Shop
‡Distributing Point

PRODUCTS AND SERVICES: Card Clothing for Cotton, Wool, Worsted, Silk and Asbestos Cards and for all Types of Napping Machinery • Brusher Clothing and Card Clothing for Special Purposes • Lickerin Wire and Garnet Wire • Sole Distributors for Platt's Metallic Wire • Lickerins and Top Flats Reclothed.

ARE YOU WELDING STAINLESS STEEL?
HERE'S *New Light* ON THE SUBJECT



This book can save you time and avoid spoilage of vital alloys, both more than ever essential to the war program today. Describes and illustrates equipment, procedures, precautions. Request copies on your company letterhead, please.

ADDRESS DEPT. TW-20

SUCCESSFUL stainless steel welding, as many a shop has found out the hard way, puts a premium not only on knowing what to do, but also what to avoid doing—and why.

That is because the problem, first of all, is a double one as compared to ordinary carbon steel welding, since it calls for maintaining the corrosion resistance of the parent metal across the weld area, as well as its strength. Furthermore, although stainless steel welds easily, the various members of the stainless family differ considerably from carbon steel—and even from each other—in the physical and chemical phenomena they exhibit during the welding process.

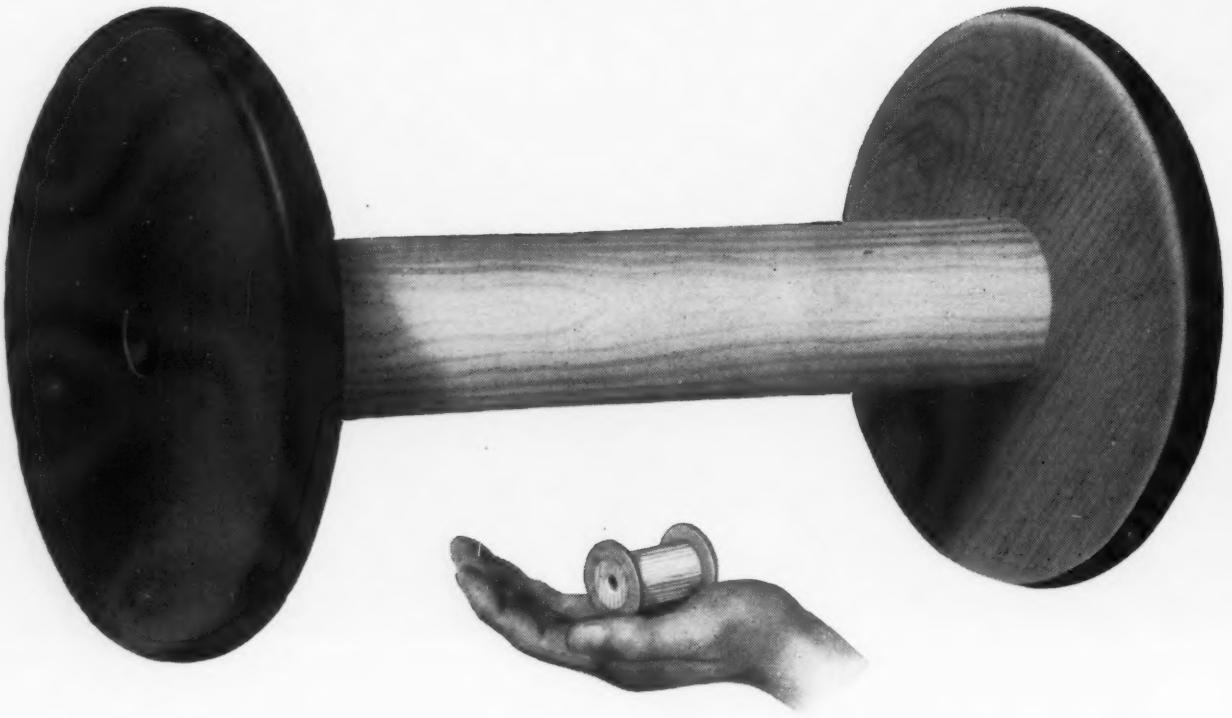
Information, clear and complete, is the basic answer. We've supplied it in a new 64-page, full-color booklet, *"Welding Stainless Steels,"* covering all the commonly-used hand or machine methods of welding Allegheny Metal. Employing a new idea in graphic illustration, this book is, we believe, the most complete and understandable coverage of the subject yet published—a welding shop "bible" purposely made so clear and simple that it is also ideal for student training. ● *Write for your copy (see at left).*

Allegheny Ludlum
STEEL CORPORATION
BRACKENRIDGE, PENNSYLVANIA

Branch Offices in Principal Cities . . . Allegheny Metal also handled by all Joseph T. Ryerson & Sons, Inc. Warehouses

A-9078 . . . W&D

US SPOOLS FOR ALL TEXTILE PURPOSES!



BALANCED for

True Running Operations at Increased Machine Speeds!

U S Why No. 6
Watch for More U S Whys in these pages

The trend to higher speed operation in all textile lines demands accurately balanced, true running spools! Precision built, U S Spools are balanced for true running operation. They are squared and held to close tolerances on both barrel diameter and traverse. This lessens wear and tear on bolsters and spindles.

Supplied in all sizes and to all specifications, U S Spools are made from selected northern stock, nailed or bushed, with fibre or wooden heads or bases. They are finished plain, oiled or lacquered, and fitted with metal bushings and shields.

At today's high operating speeds, precision built U S Textile Accessories are your best assurance of uniform yarns. They include Bobbins, Shuttles, Spools, Cones, Cardroom Bobbins, Skewers and Rolls — embody every improvement that 86 years of manufacturing experience has proved worthwhile.

Let our mill experienced and technically trained U S Representative help you keep maintenance and operating costs down, speed up production, improve the quality of your mill output.

US BOBBIN & SHUTTLE CO.

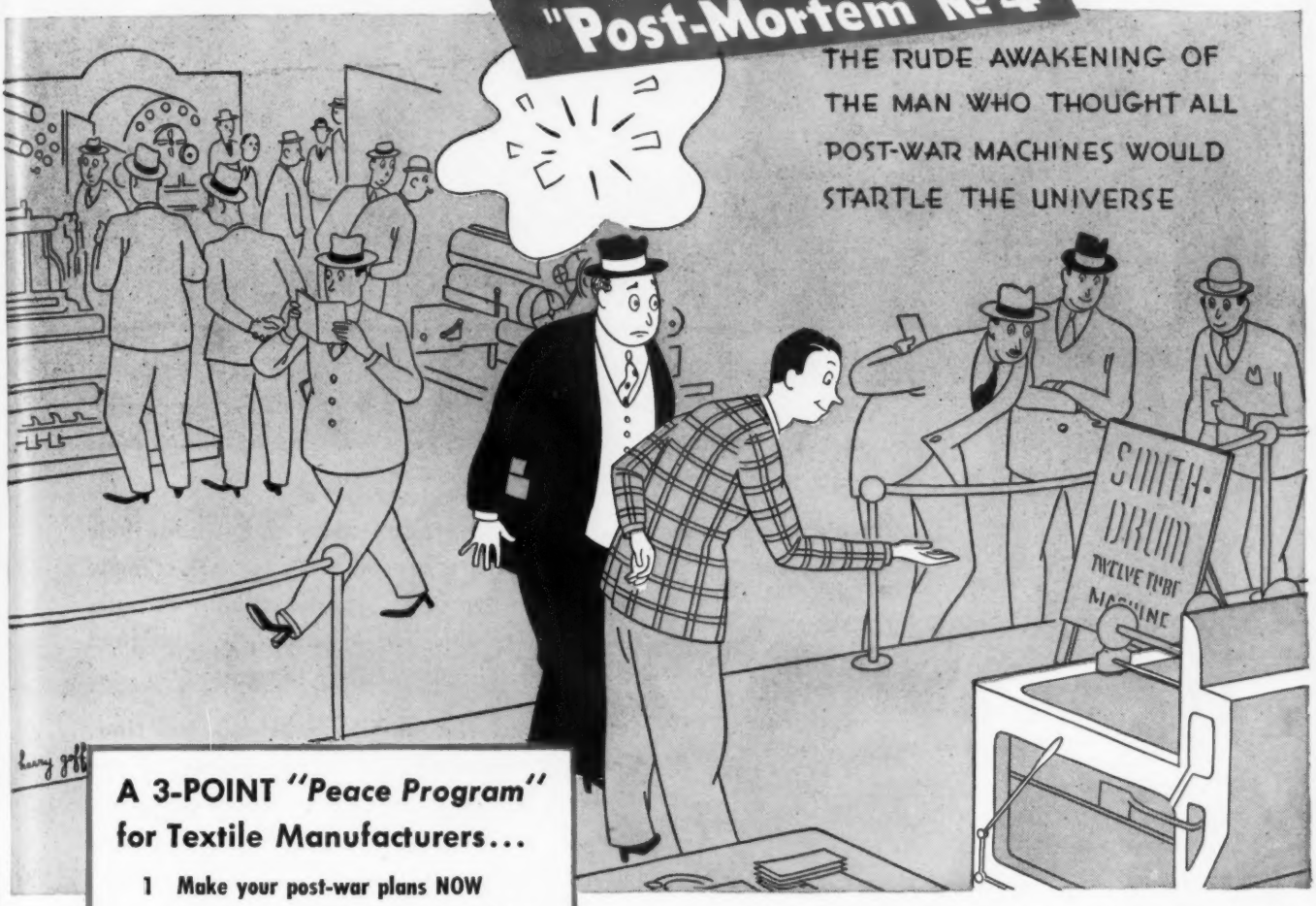
LAWRENCE, MASS.

PROVIDENCE, R. I. JOHNSON CITY, TENN. GREENVILLE, S. C. CHARLOTTE, N. C.

CHICAGO AGENT: Albert R. Breen, 20 E. Jackson Blvd. CANADIAN AGENT: W. J. Westaway, Montreal

ALABAMA AGENT: Young & Vann Supply Co., Birmingham

POST-WAR "Post-Mortem" No 4



A 3-POINT *"Peace Program"* for Textile Manufacturers...

1 Make your post-war plans NOW

don't let peace catch you without definite plans for products, markets, sales and production.

2 Decide on new equipment needs NOW

don't wait until the war is over before making a thorough survey of your production equipment and deciding what machines must be replaced.

3 Order your new equipment NOW

don't risk serious delay in securing necessary new equipment for post-war production. Metals and other basic materials will continue to be scarce for a long time after the war ends.

If you are going to need new dyeing and finishing equipment after the war, we earnestly recommend that you place your order with us *now*. Our "Post-War Purchase Plan" assures you prompt delivery when war restrictions are lifted. Write *now* for complete details of this plan.

Apparently, there are some textile manufacturers who believe that all post-war production machines are going to be completely revolutionary! Well, those fellows are in for a rude awakening! They must have forgotten that all equipment manufacturers have been up to their ears in war work for several years . . . with neither the time nor manpower for development of radically new post-war machines. For a long time after peace is declared, the entire facilities of most of us will be taken up supplying the pent-up demand.

We, like most other machinery makers, do *not* expect to have a lot of new machines that will startle the Universe! We *will* have the same dependable Smith-Drum machines for dyeing, drying and finishing that always have been way out ahead of all competition in design and performance . . . *plus some worthwhile improvements!*

We urge every textile manufacturer to anticipate his post-war requirements for new machines and *place his order now* for delivery as soon as war restrictions are lifted. Such action *now* will prevent a long wait for needed machines and permit quick conversion to *profitable* peace-time production.

In taking advantage of our "Post-War Purchase Plan" you can rest assured that you will get the *most advanced machines of their type . . . soon* after the war. That will give you a long running start on those who are waiting to see the "revolutionary" post-war machines that won't be there. Write to

SMITH, DRUM & COMPANY
Allegheny Avenue at 5th Street, Philadelphia 33, Pa.

SMITH-DRUM TEXTILE MACHINES

for hosiery dyeing, skein dyeing, package dyeing, beam dyeing, piece goods dyeing, package drying, skein mercerizing, warp mercerizing, hosiery inspection.

COUNTLESS *Busy Textile Mills* DEPEND ON *Olate* FOR SAFE PROCESSING

TODAY'S tight production schedules leave no room for processing errors. Fabrics must be turned out fast . . . quality specifications must be met to the letter!

That's why so many busy mills are depending today on Olate for their wet finishing operations. For this pure, neutral, low titer soap is made expressly to provide the maximum in safe, thorough, trouble-free processing . . . designed to help textile mills "deliver the goods."

Olate solutions are fluid, thanks to its low titer. You get thorough, even penetration of the cloth. You get protection against bare spots, uneven shrinkage, non-uniform fulling and poor felting. And you get the free rinsing so important in producing clean, sweet-smelling goods.

Yes, Olate is helping many textile mills to avoid costly processing errors. Perhaps there's a spot in *your* mill where Olate can help smooth out production.

"TOPS" for RAYONS and ACETATES

In scouring and dyeing rayon and acetate fabrics, you'll see concrete evidence of Olate's gentleness and safety. You'll see it in even shrinkage . . . in the splendid protection it provides against such costly trouble-makers as streaks, dye blotches, and chafe marks.

"TOPS" for WOOLENS, too

You can count on Olate to give you an efficient scouring and fulling job on woolens and worsteds. Olate has the all-important lubricating properties for these operations. Splendid detergent and emulsifying properties, too. Olate loses no time in loosening the dirt and oil in these fabrics . . . and holds them in suspension until they can be flushed thoroughly from the fibers.

Olate—Safe and efficient for every textile soap usage

PROCTER & GAMBLE

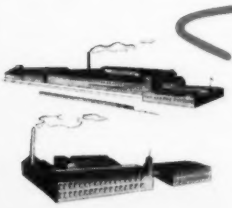
A 4 in 1 COLORED YARN SERVICE

UNLOADING A FRANKLIN PROCESS PACKAGE DYEING MACHINE

Franklin Process Colored Yarns are supplied by four plants. Yet these plants work as one; — first because they use the same formulas for all standard shades and the same process; second because all of them are available to fill your order. No matter which plant takes your order, it will be filled by that plant which can serve you best. This 4 in 1 service has many advantages as follows:—

1. **All your eggs are NOT in one basket; yet the quality of the product is the same no matter which plant processes it.**
2. **You benefit from both special and general experience: — special because each of our plants specializes to a considerable extent in serving one or more branches of the textile industry; general because the experience of one plant becomes the experience of all four through our "shuttle system", — exchange of information.**
3. **We can supply yarn as well as dyeing, thus saving you time and trouble and concentrating responsibility.**
4. **We dye by the original Franklin Process, which has revolutionized yarn dyeing.**
5. **We offer you not only the largest package dyeing capacity in the world, but also the greatest variety of machine sizes. Thus, we can handle both large and small orders equally well.**

If you make fabrics requiring cotton, worsted, spun rayon, or blended colored yarns, let our 4 in 1 service save you time, trouble and money.



Franklin Process

LARGEST PACKAGE DYERS IN THE WORLD

Providence • Philadelphia • Greenville • Chattanooga • New York Representative, 40 Worth Street • Chicago Representative, 100 West Monroe Street.

AHCOVEL

☆ THE VERSATILE SUBSTANTIVE SOFTENER AND FINISH AVAILABLE *Now* TO ALL FINISHERS

Ahcovel is now being used on all types of synthetic fabrics, including acetate, viscose and protein fibres, as well as blends of same with cotton and wool. It is available NOW, for civilian as well as war requirements, in its original prewar quality; no changes, no substitutions.

Its Advantages INCLUDE THE FOLLOWING

1 Gives a soft, drapy or mellow, full bodied hand.

2 May be used alone, or with starches, gums, resins or similar agents.

3 Does not discolor or turn rancid with age.

4 Highly resistant to washing and dry cleansing. An integral part of the fabric.

5 Resistant to hard water.

6 Easy to apply with standard equipment.

7 More economical than many old type softeners.

Let our laboratory technicians fit Ahcovel to your finishing requirements.

ARNOLD-HOFFMAN & CO., INC.

ESTABLISHED 1815 • PLANTS AT DIGHTON, MASS. AND CHARLOTTE, N. C.

PROVIDENCE, RHODE ISLAND

NEW YORK • BOSTON • PHILADELPHIA • CHARLOTTE

Never too Large nor too Small for

ALOYCO STAINLESS STEEL VALVES

TO produce these giant valves, probably the largest ever built entirely of Stainless Steel, and to meet unusual job requirements, Aloyco engineers developed completely new manufacturing methods to insure perfect closure without danger of galling and seizing. Weighing one ton each, height open 129", closed 112", pipe size 16", these valves operate under hydraulic control pressure of 90 p.s.i. and line working pressure of 235 p.s.i. in the production of high octane gasoline. All parts exposed to corrosive liquids and vapors are made of Chrome-Nickel 18-8S Steel.

This is another example of the versatility of this organization in solving intricate problems of design and manufacture of valves for all types of corrosive conditions, in a wide range of sizes and alloys.

Whether the valve you need is a giant or a midget, Aloyco can make it for you in the stainless alloy most resistant to your particular corrosive conditions.

ALOYCO

Stainless Steel VALVES and FITTINGS

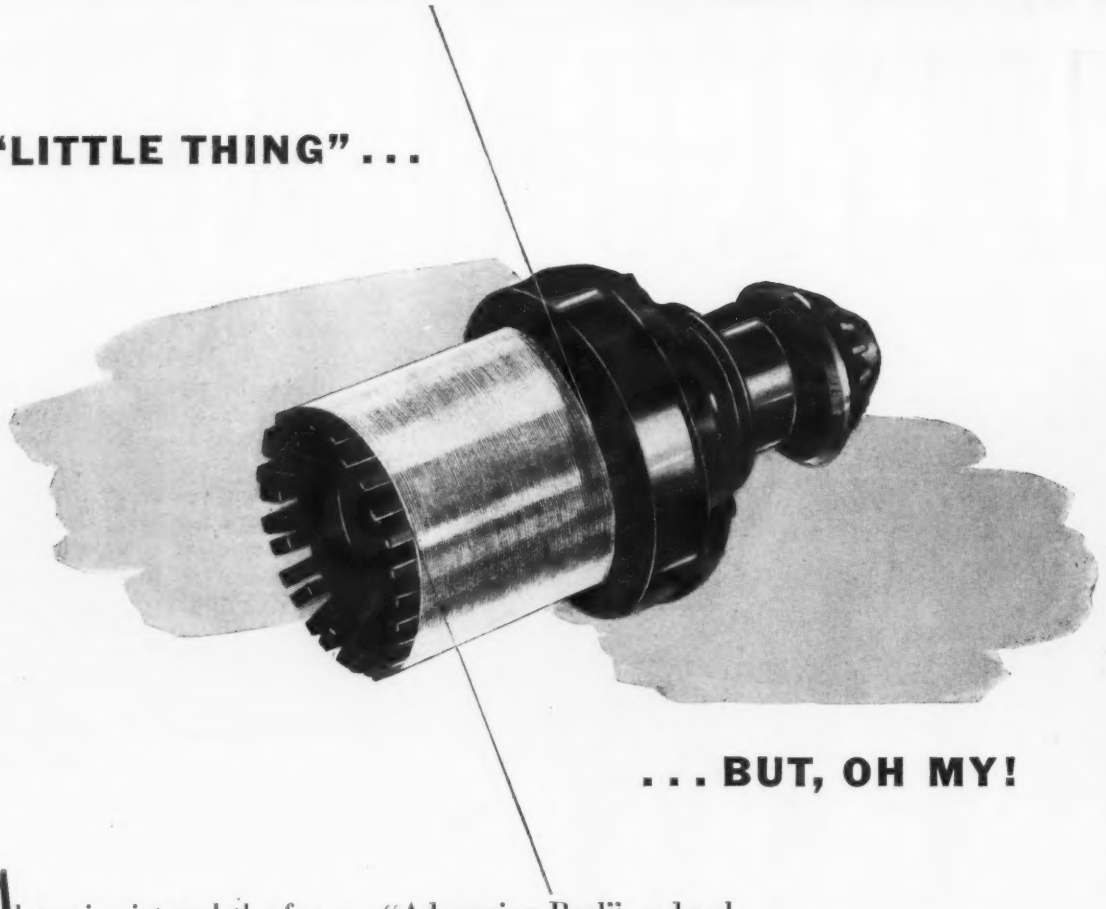
GATE VALVES • GLOBE VALVES
Y VALVES • CHECK VALVES
LEVER THROTTLE GATE VALVES
TANK VALVES • SCREWED FITTINGS
FLANGED FITTINGS
GAUGE GLASS FITTINGS

ARMY NAVY

You may obtain Aloyco Valves and Fittings for new construction on high priorities, and for maintenance and repairs under M.R.O. regulations.

Alloy Steel Products Company, Inc., 1304 West Elizabeth Avenue, Linden, N. J.

A "LITTLE THING" . . .



. . . BUT, OH MY!

Above is pictured the famous "Advancing Reel", a development of Industrial Rayon research and invention.

Just as an acorn makes a giant oak, this ingenious little reel built a huge new plant with intricate machines, blocks long. It gave the rayon industry a new standard of quality, "Continuous Process" Rayon Yarn. The yarn made by this new production method is so relatively knotless and free of broken filaments, that the cloth woven from it dyes evenly without streaks or filling bands, even in the difficult flat tones. And mill efficiency, on which profits depend, soars with the use of this trouble-shooting yarn.

The development of the "Continuous Process" is typical of a company which has long recognized that its greatest assets are not in just plants and inventories, but in the skill and acumen of its engineers and technicians—the men whose genius makes for textile progress.

Industrial
RAYON CORPORATION
MAKERS OF
"CONTINUOUS PROCESS" RAYON YARN
AND Spun-lo KNIT UNDERWEAR CLOTH

*Reg. U. S. Pat. Off.

CLEVELAND, OHIO • *New York Office:* 500 Fifth Avenue

IN BELTING—

LEATHER LEADS!

. . . IN LONGER LIFE!

Nothing yet has been devised as a power transmitting material to equal the long, useful life of properly tanned leather belting.

Nature gave it the fibrous structure. Science has restored its life by nourishing those fibers after tannage. The result is permanent pulling power, year after year, with only occasional dressing. Insist on first-grade leather!

Houghton's special mineral VIM tannage, as well as its combination OKAY leather, is further improved for grip and pull by adding a patented tread to the pulley side. This tread increases contact tension—minimizes slip.

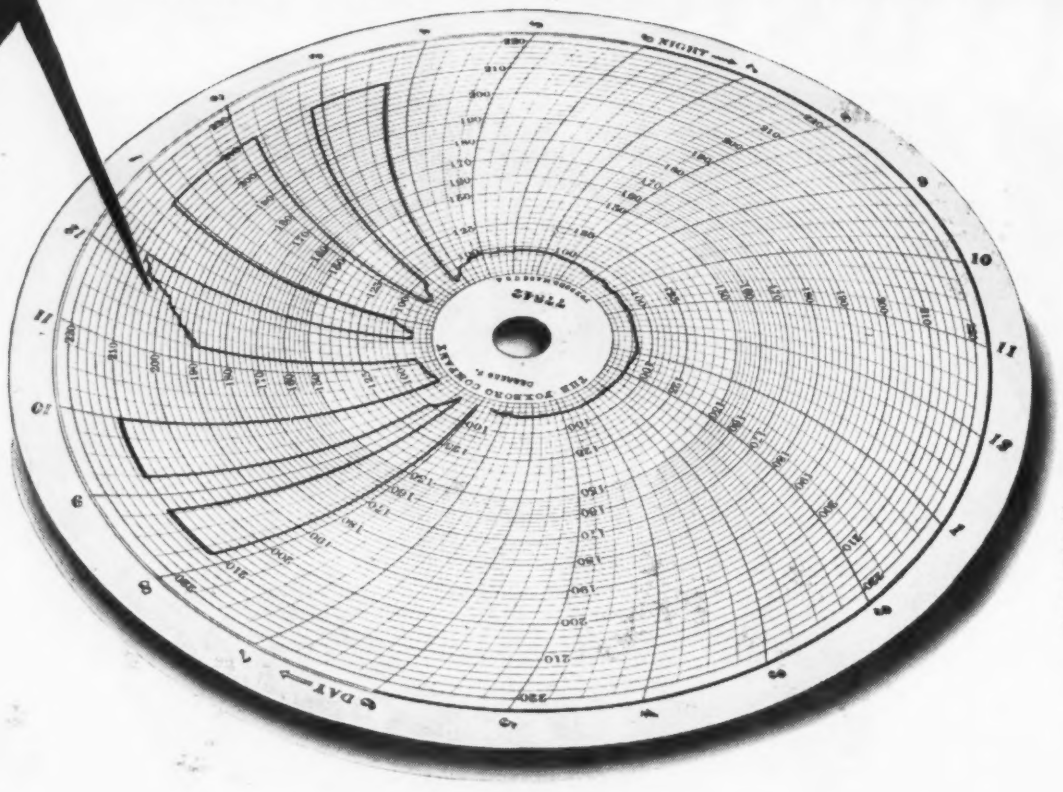
Other merits—water-and-oil-proof treatment, high C/F, elasticity, pliability, high tensile strength—add up to the greatest value you can get in a power transmission belt. For full proof, write E. F. HOUGHTON & CO., Philadelphia.

HOUGHTON'S

Treaded LEATHER BELTING

X MARKS THE SPOT

where needless production losses occurred!



This chart shows how one batch "went wrong" because of boiler steam failure impossible to control at the process. Without the record, no one would have known why it happened!

Only Controllers that keep Written Records can give such vital facts about your product!

On any process employing temperature controllers, you'll get important *added protection* by installing controllers that keep written records of the temperature!

Foxboro Recording Temperature Controllers not only hold process temperatures exactly where you want them, but give you continuous graphic records to prove it. Even if external factors, such as steam failure or mechanical troubles, should "let you down", these automatic watchmen instantly mark it on the record . . . give you immediate opportunity to check the cause and correct it!

Foxboro On-Off Temperature Controllers are the type that has been proved best for over 65% of all control jobs . . . exactly suited to the characteristics of most processes. Simple, positive-acting, and calibrated in degrees for accurate direct setting.

Install Foxboro Recording Temperature Controllers and get continuous, accurate checks against needless losses. Write for Bulletin 225-2. **The Foxboro Company, 84 Neponset Avenue, Foxboro, Mass., U. S. A.** Also Montreal, Canada. Branches in principal cities.

Foxboro On-Off Temperature Controller—the closest type of control for 65% of all jobs. Other Foxboro Controllers give equally outstanding performance for *special* jobs . . . the other 35%!

ARMY E NAVY

FOXBORO

Reg. U. S. Pat. Off.

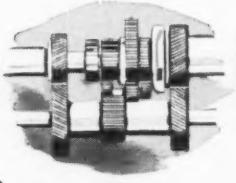
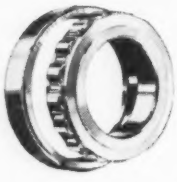
RECORDING TEMPERATURE CONTROLLERS

Sailors in the U.S. Navy wear fine surah neckerchiefs woven of solution-dyed black Koda, Eastman continuous-filament acetate rayon. One reason for the Navy's selection of Koda is its mildew resistance . . . a resistance which does not depend on special finishes, but is characteristic of the yarn. Other factors are black Koda's exceptional fastness to sunlight . . . this smooth yarn's soil resistance . . . its ease of laundering. Qualities that fit Eastman acetate rayon for ocean duty are also helping to build superior service weaves for home front needs. For further information about Koda, consult A. M. Tenney Associates, Inc., 10 East 40th Street, New York, sales representatives for the Tennessee Eastman Corporation, subsidiary of Eastman Kodak Company.

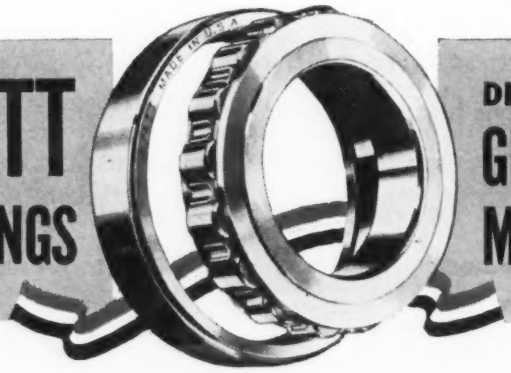
*Eastman

ACETATE RAYON

With their lives...

our fighting men depend on the micro-inch accuracy and unfailing strength of vital parts  in planes, ships, tanks and guns. Prominent among these parts are millions of  Hyatt Roller Bearings... guarding against friction and power losses... guarding against losses of things that are precious to every American

HYATT ROLLER BEARINGS SERVE SILENTLY, ACCURATELY, EFFORTLESSLY
WHEREVER GEARS, SHAFTS, AND WHEELS TURN

HYATT BEARINGS  DIVISION OF GENERAL MOTORS

HYATT BEARINGS DIVISION · GENERAL MOTORS CORPORATION · HARRISON, NEW JERSEY

STOP MOLD BEFORE IT STARTS!

It may seem a contradiction to try to stop an attack before it starts—but that is precisely what the Dowicides do in combating the costly ravages of mold, decay and termites.

The 17 related Dowicide products are the results of many years' research. Their effectiveness has been proven many times over through successful use in the paper, paint, leather, lumber, and textile fields. Added to these products, Dowicides prevent mold and bacterial growth even under the most severe conditions.

Dowicide has three basic uses in the textile field. In manufacturing operations, sizing materials are extremely vulnerable to mold attack. As they are often held in solution for extended periods, Dowicides are used extensively to prevent spoilage.

Dowicide can also be readily incorporated into the fabric itself to prevent mold growth. Tarpaulins, awnings, sails, etc., as well as many war products, such as Army duck and canvas for tents, are effectively protected with these materials.

In addition, Dowicide provides complete rot resistance for canvas goods which come in contact with the soil. Details of Dowicides' uses in the textile field are available on request.

THE DOW CHEMICAL COMPANY
MIDLAND, MICHIGAN

New York • Boston • Washington • Philadelphia • Cleveland
Detroit • Chicago • St. Louis • Houston • San Francisco
Los Angeles • Seattle

Dow announces the opening of a Detroit office to serve this important industrial area.

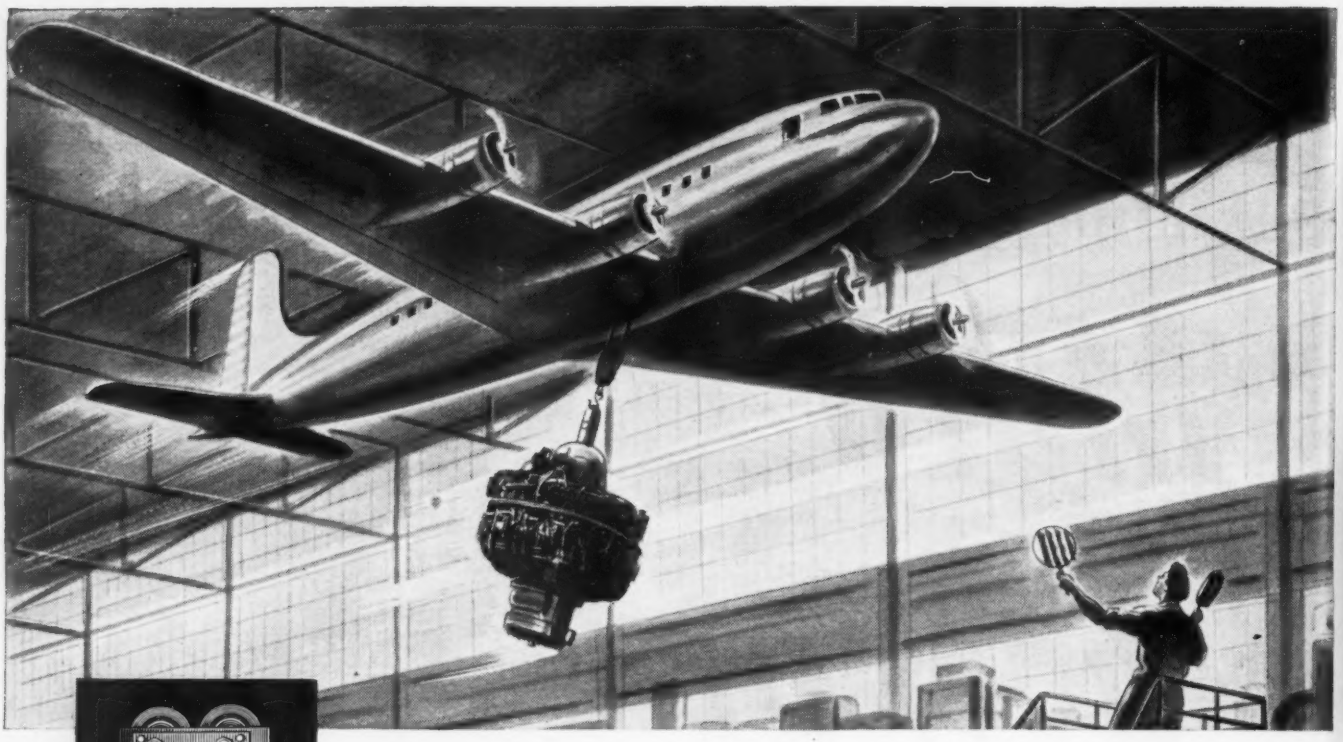
DOWICIDE

GERMICIDES AND FUNGICIDES

Other Dow products serving the Textile Industry: Ethocel, Saran, Methocel, Caustic Soda, Vat Dyes and many others

DOW

CHEMICALS INDISPENSABLE TO INDUSTRY AND VICTORY



Wright

cranes and hoists are your cargo planes . . .

● Up under factory ceilings, **WRIGHT** cargo carriers move materials fast, safely and economically —vertically or horizontally. No "ceiling zero" with efficient **WRIGHT** Improved High Speed Hoists, **WRIGHT** *Speedway* Electric Hoists or **WRIGHT** Cranes. Instead, ceiling areas are used to one hundred per cent production advantage.

The **WRIGHT** way is tailor-made to meet your problems—and to save you money. Consult your local **WRIGHT** distributor, who is well qualified to suggest improved material-handling methods for your plant. You will find him listed under "**HOISTS**" in your metropolitan classified telephone directory.

WRIGHT MANUFACTURING DIVISION
York, Pa., Chicago, Denver, Los Angeles, San Francisco, Portland, New York

AMERICAN CHAIN & CABLE COMPANY, INC.
BRIDGEPORT · CONNECTICUT

ARMY E NAVY
FLYING OVER THE WRIGHT HOIST PLANT

ACCO
In Business for Your Safety

WRIGHT *Improved High Speed* **HOISTS**

"WE LOOK FOR *Dependable Delivery and #1 Quality* IN KNITWEAR WE BUY"

SAYS LIEUT. COMDR.
EVOR S. KERR, JR.,
U. S. COAST GUARD
CLOTHING PROCUREMENT OFFICER

"In buying knitted articles for the U. S. Coast Guard, we have to have dependable sources of supply on large quantities of quality merchandise. Prompt, dependable delivery to meet increasing demands for this branch of our fighting forces is imperative. In addition, the merchandise we buy must be of No. 1 quality and in line with our standard specifications."

Both delivery and quality of knitwear depend to a great extent on *needle* performance. For good needles save time, prevent work interruptions, reduce yarn waste and help to keep machines operating at peak efficiency. That's why so many knitting mills with war contracts use Torrington Needles. Torringtons are the machine-made needles with machine-controlled uniformity of temper, finish, strength and over-all dimensions. They can help you deliver No. 1 quality goods faster. There's a Torrington Needle for every type of knitting.

THE TORRINGTON COMPANY, Torrington, Conn., U.S.A.
Established 1866
Branches: New York • Philadelphia • Chicago • Greensboro, N. C.
Boston • St. Louis • Toronto, Canada

TORRINGTON *Latch Needles*

Small Size and Compact Design are Features of these Needle Bearings

REQUIRE LITTLE OR NO MORE SPACE THAN A PLAIN BEARING OF COMPARABLE RATING

One of the outstanding advantages of Torrington Needle Bearings is their exceptionally small size in relation to their unusually high radial load carrying capacity.

The use of a full complement of small diameter rollers within a single retaining raceway—the basic design principle of all Torrington Needle Bearings—has provided the advantage of *anti-friction operation* within space limits no larger than required for a sleeve or plain bushing.

The small size which characterizes the Needle Bearing also contributes to efficiency and economy of product design in other important ways: it facilitates compact design; simplifies housing structures, frequently permits reduction in overall size; contributes to lighter weight; and through one or more of these advantages—makes for greater efficiency and lower cost.

Size Advantage in Newer Type Needle Bearings

As one new application led to another, modifications were made and new type Needle Bearings were developed by Torrington to meet new engineering requirements which were encountered, particularly in aircraft applications. For example, the AT Type, originally developed for use in conjunction with AN bolts, has a heavy, through-hardened outer race, a heavy hardened inner race, and is designed to give a maximum static non-brinell capacity equal to the sheer strength of the AN bolt. Another type was designed to adapt the Needle Bearing principle to cam-follower service...another for "x-tra capacity" load requirements . . . and so on until today Torrington provides a Needle Bearing to meet virtually any radial load requirement. The size ranges of the principle types are shown in the accompanying table. Additional information on other types and sizes will be found in our Needle Bearing Catalog, available on request.

TYPE DC

TYPE NCS

TYPE AT

TYPE RC

TYPE NEEDLE BEARING	MINIMUM SHAFT DIAMETER	MAXIMUM SHAFT DIAMETER
DC	.1875"	3.500"
NCS	.6250"	5.500"
AT*	.1900"	1.000"
RC	.2500**	1.500**

**Size range to fit Standard AN Bolts Nos. 3 to 16*

***Indicates OD of stud on cam-follower. Camroll diameter: range from .6875" to 4.000".*

Importance of Size in Postwar Product Design

War-accelerated design of military equipment and material which has shown a definite trend toward "compactness" to save cargo space and lighter weight to facilitate air transport will continue to promote greater efficiency in the design of postwar products. The contributions which Needle Bearings can make in this direction are already well established in many fields. If you are planning new products or design improvements in old, it will pay you to investigate fully the advantages in the use of Needle Bearings. Our engineering department will welcome the opportunity to cooperate in developing designs or assist in the selection of the correct Needle Bearing for your requirements.

THE TORRINGTON COMPANY

Established 1866 • Torrington, Conn. • South Bend 21, Ind.

"Makers of Needle Bearings and Needle Bearing Rollers"

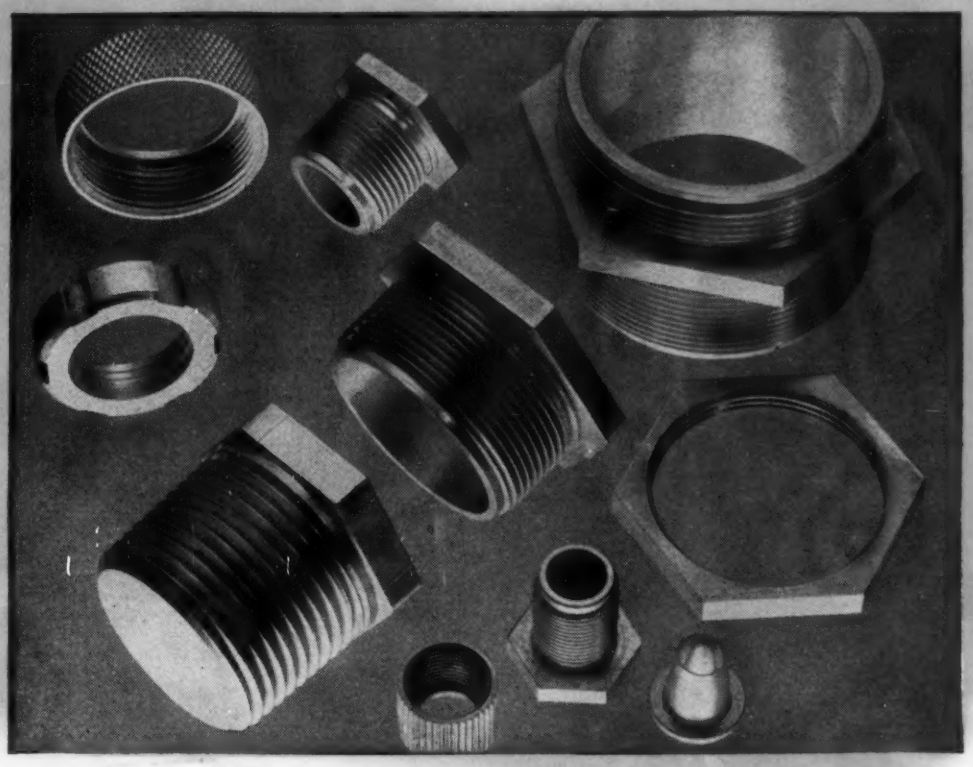
New York • Boston • Philadelphia • Detroit
Cleveland • Seattle • Chicago • San Francisco
Los Angeles • Toronto • London, England

LET'S GO! U.S.A. KEEP 'EM FLYING!

TORRINGTON
NEEDLE BEARINGS

Weight Saving

is important even in these small parts



Mazlo Magnesium parts like these account for important weight savings. Though they are small, there may be hundreds of them on a single piece of equipment. They are time savers, too, for machinery manufacturers, because the Mazlo Magnesium bar stock, from which they are made, machines at high speeds.

When you think of magnesium as a means of saving weight on textile machinery, of speeding up equipment, of reducing vibration and improving product quality, go all the way. Include Mazlo Magnesium parts like these and gain maximum benefit through their weight saving.

To those designers who are wondering how to employ magnesium to best advantage, American Magnesium's engineers offer their services. Certainly, a great deal of equipment working on wartime products can be made to perform better by a judicious use of lightweight Mazlo Magnesium castings, forgings, screw machine products, shapes or sheet.

For any assistance on the use of magnesium, write Aluminum Company of America, Sales Agent for Mazlo Magnesium Products, 1705 Gulf Building, Pittsburgh, Pennsylvania.

MAGNESIUM MAZLO PRODUCTS

MAZLO

REG. U.S. PAT. OFF.

AMERICAN MAGNESIUM CORPORATION

SUBSIDIARY OF ALUMINUM COMPANY OF AMERICA

PLENTY Tough

Patd. and Pats. Pendg.

Self Locking HOLLOW SET SCREWS

No "softies", these "Unbrako" Self-Locking Hollow Set Screws! Made tough at the start, they're hardened to "stand the gaff" and possess almost unbelievable strength, as proved by actual physical tests. What's more, they defy the menace of vibration and will not work loose of their own accord. When tightened as usual, the knurls *dig in and lock automatically.* Yet they can be readily removed with a wrench and used over and over again any number of times. Available in all sizes from No. 4 to 1½" diameter. Remember the name —be sure to specify "Unbrako" on your next order.

Knurling of Socket Screws originated with "Unbrako" years ago.

OVER 40 YEARS IN BUSINESS

STANDARD PRESSED STEEL CO.

JENKINTOWN, PENNA., BOX 571 • BRANCHES: BOSTON • DETROIT • INDIANAPOLIS • CHICAGO • ST. LOUIS • SAN FRANCISCO

You gain two ways with this Loom Motor

First, you save on maintenance cost. Westinghouse loom motors are especially designed and built to resist the heavy vibration encountered in loom service. The extra rugged construction of these motors keeps them on the job and keeps production moving.

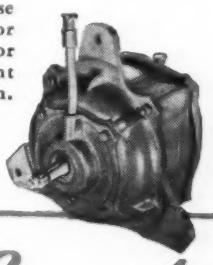
Second, you save on power costs. Westinghouse loom motors are designed to deliver high efficiency. Proper relation of rotor weight helps the motor to "iron out" some of the peak loads occurring at high frequency in loom drives. Over-all efficiency is increased—power costs reduced to a minimum.

Before you replace your present loom motors, get all the facts about the motor that has been designed and built exclusively for textile mills—the motor that can meet the strains imposed by new looms before they are "broken in". Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.

J-94604

MANY ASSEMBLY COMBINATIONS

Westinghouse loom motors are particularly adaptable for special applications. There are many possible variations in assembly arrangements including three-point suspension, left and right-hand applications, base mounted, and many others. They can be supplied for all types of special mountings or lubrication requirements.

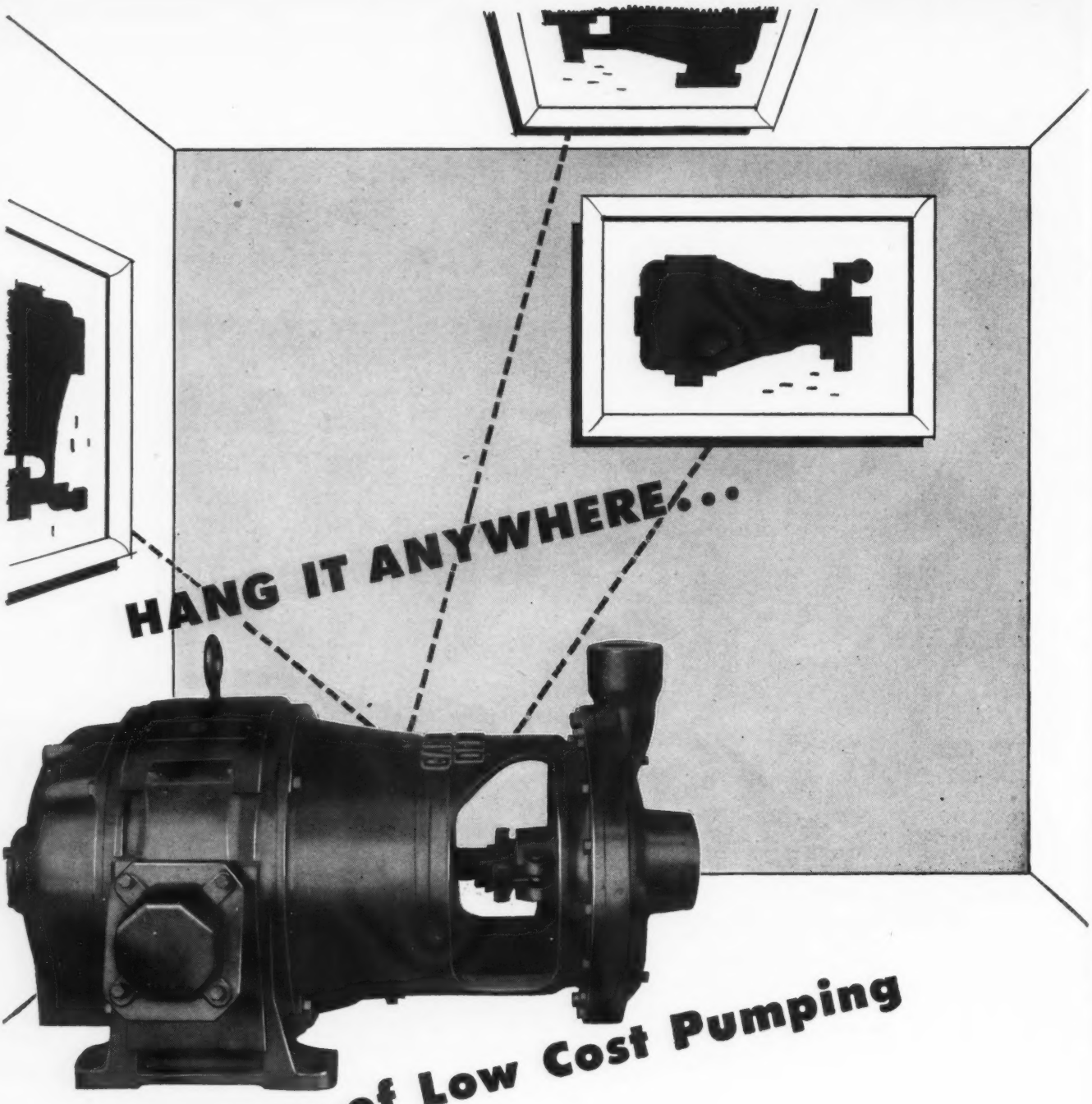


Westinghouse loom motor designed for three-point suspension.

Westinghouse

PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

Loom Motors



this picture of Low Cost Pumping

Install it anywhere—on floor, walls or ceiling.

No matter where, you'll get a new high in pumping efficiency.

This Gardner-Denver Close-Coupled Centrifugal is a masterpiece of compact design—and a masterpiece of pumping efficiency in any position.

Pump and motor combine to form an efficient, high-capacity unit, ready for immediate installation.

Discharge nozzles can be turned in any one of eight different positions.

Note these additional advantages:

1. **Water passages and impeller blades carefully proportioned for efficient operation.**
2. **Vital parts cast in GarDurloy for greater strength.**
3. **Splash-proof, explosion-proof motor available if desired.**
4. **Capacities range from 30 to 1200 G.P.M.**

For complete information and specifications on Close-Coupled Centrifugals, write Gardner-Denver Company, Quincy, Illinois; Atlanta, Ga.; Birmingham, Ala.; Boston, Mass.; Hazleton, Pa.; Knoxville, Tenn.; Washington, D. C.; New York, N. Y.; Philadelphia, Penn.; Pittsburgh, Penn.

GARDNER-DENVER *Since 1859*

The same...

high quality at low cost

consistently maintained

in peace and war

LYKOPON

SODIUM HYDROSULFITE

LYKOPON *is a trade-mark, Reg. U. S. Pat. Off.*

3 awards to Rohm & Haas Company and its associated firms, The Resinous Products & Chemical Company and Charles Lennig & Company.

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Manufacturers of Chemicals for the Textile, Leather and other Industries . . . Plastics . . . Synthetic Insecticides . . . Fungicides . . . Enzymes

"Now, I don't mean purchase price...LUBRIPLATE probably costs a lot more per pound than the grease you are now using... what I'm getting at is the over all costs.

"LUBRIPLATE lasts longer...yes, it does. You see the film is tougher...it stands up longer. A lot of fellows who use LUBRIPLATE tell me they have been able to stretch their lubrication schedules. This in itself is a saving.

"But the big thing is LUBRIPLATE arrests progressive wear and prevents rust and corrosion. Sure you save on parts replacement and machine shutdown...and as to lubrication...LUBRIPLATE is the slipperiest stuff you can put on a bearing. Of course it saves on power. All and all LUBRIPLATE is the most economical lubricant you can use."

• • •

Don't take our salesman's word for the economy and efficiency of LUBRIPLATE. Let us send the "LUBRIPLATE FILM" written especially for your industry. Read the case histories and unsolicited testimonials of other users. Write for a copy today.

℞ FOR YOUR MACHINERY

No. 3—Ideal for general oil type lubrication. Ring oiled bearings, wick feeds, sight feeds and bottle oilers.

No. 8—Because of its high film strength and long life reflects outstanding performance in most types of enclosed gears (speed reducers).

No. 107—One of the most popular grease type products for general application by pressure gun or cups.

No. 70—For a wide range of grease applications, especially at temperatures above 200 degrees F.

No. 130-AA—Known nationwide as the superior lubricant for open gears, heavy duty bearings, wire rope, etc.

BALL BEARING—This is the LUBRIPLATE lubricant that has achieved wide acclaim for use in the general run of ball and roller bearings operating at speeds to 5000 RPM and temperatures up to 300 degrees F.

LUBRIPLATE DIVISION

FISKE BROTHERS REFINING COMPANY

NEWARK, N. J. **SINCE 1870** TOLEDO, O.

WRITE FOR THE NAME OF THE DEALER NEAR YOU

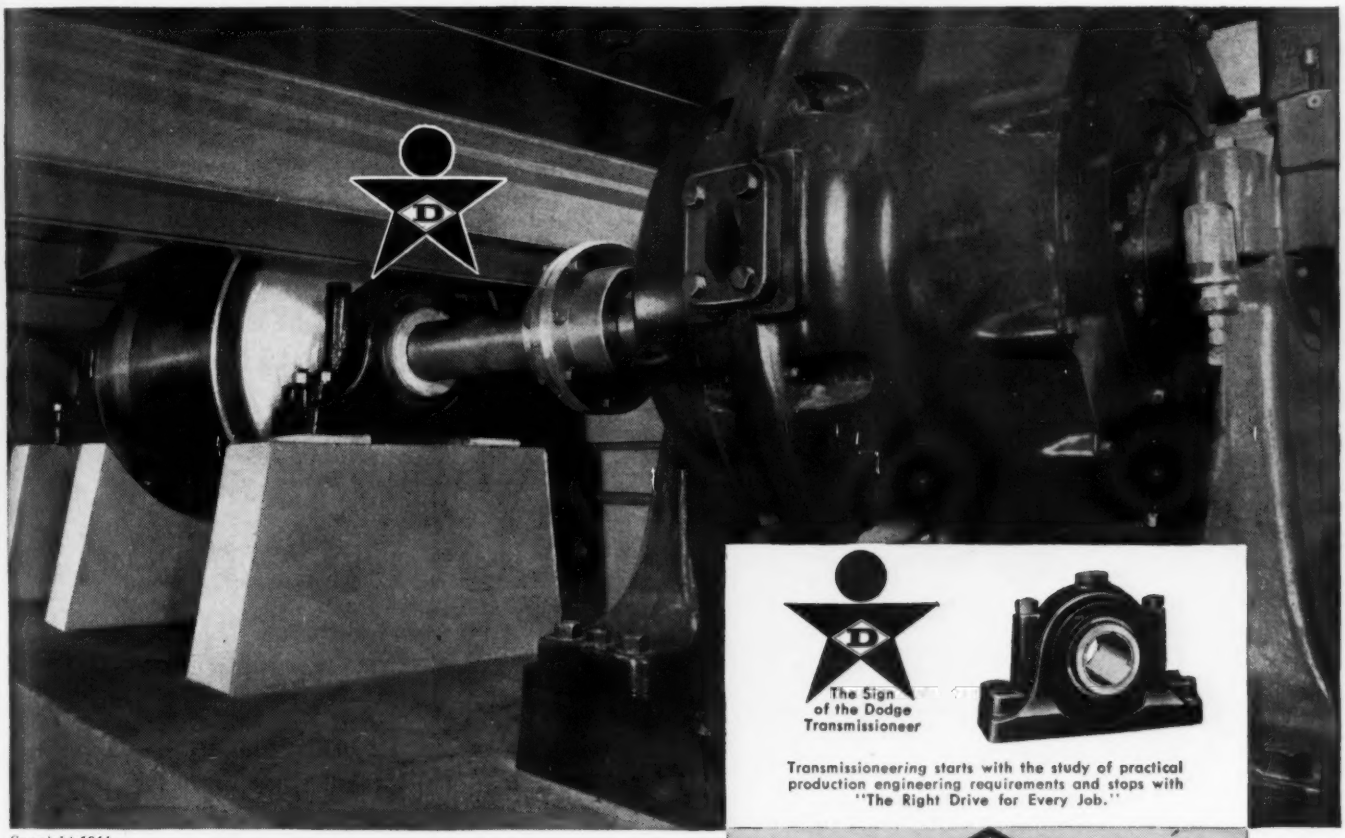
Transmissioneering Delivers More Power through Bearings

Dodge Transmissioneering offers you long experience in proper application, use and maintenance of Dodge-Timken Bearings and other Dodge Power Transmission Equipment. Bearings are the backbone of your power transmission . . . they are the "power stations" that feed your production machines. Super-ruggedness and precision in Dodge-Timken Bearings guard against power waste and production letdowns.

Since you pay the same for power, dissipated or delivered, make sure of maximum power-delivery, for present or postwar production, by installing Dodge-Timkens at every point of friction or hard service.

For sound Transmissioneering service, contact the nearest Dodge Transmissioneer, or write . . .

DODGE MANUFACTURING CORPORATION
Mishawaka, Indiana, U. S. A.



The Sign of the Dodge Transmissioneer

Transmissioneering starts with the study of practical production engineering requirements and stops with "The Right Drive for Every Job."

Copyright 1944
Dodge Manufacturing Corporation

Advantages of
DODGE-TIMKEN SPECIAL DUTY BEARINGS

1—Full ball and socket self-alignment ...guards against power waste and wear.

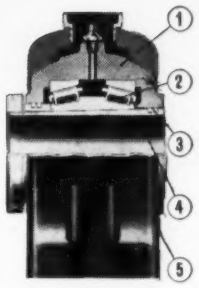
2—Timken tapered roller bearings give full radial and thrust load capacity . . . put full power in production.

3—Easy to install—simply slip over shaft and tighten collar.

4—Piston ring seals retain lubricant and exclude dirt.

5—Rugged outer housing gives overall protection to bearing.

Furnished completely assembled . . . ready for instant installation . . . capable of 30,000 hours of service . . . pre-lubricated for 50-million revolutions under normal conditions without relubrication . . . sealed against admission of dirt or leakage of lubricant. They eliminate maintenance delays . . . conserve vital man-hours and critical materials . . . speed peak production.



DODGE

THE RIGHT DRIVE FOR EVERY JOB

"D" Unit Mount

"S-1" Unit Mount

"B-1" Unit Mount

BUY MORE WAR BONDS

From end to end CRANE can equip it!

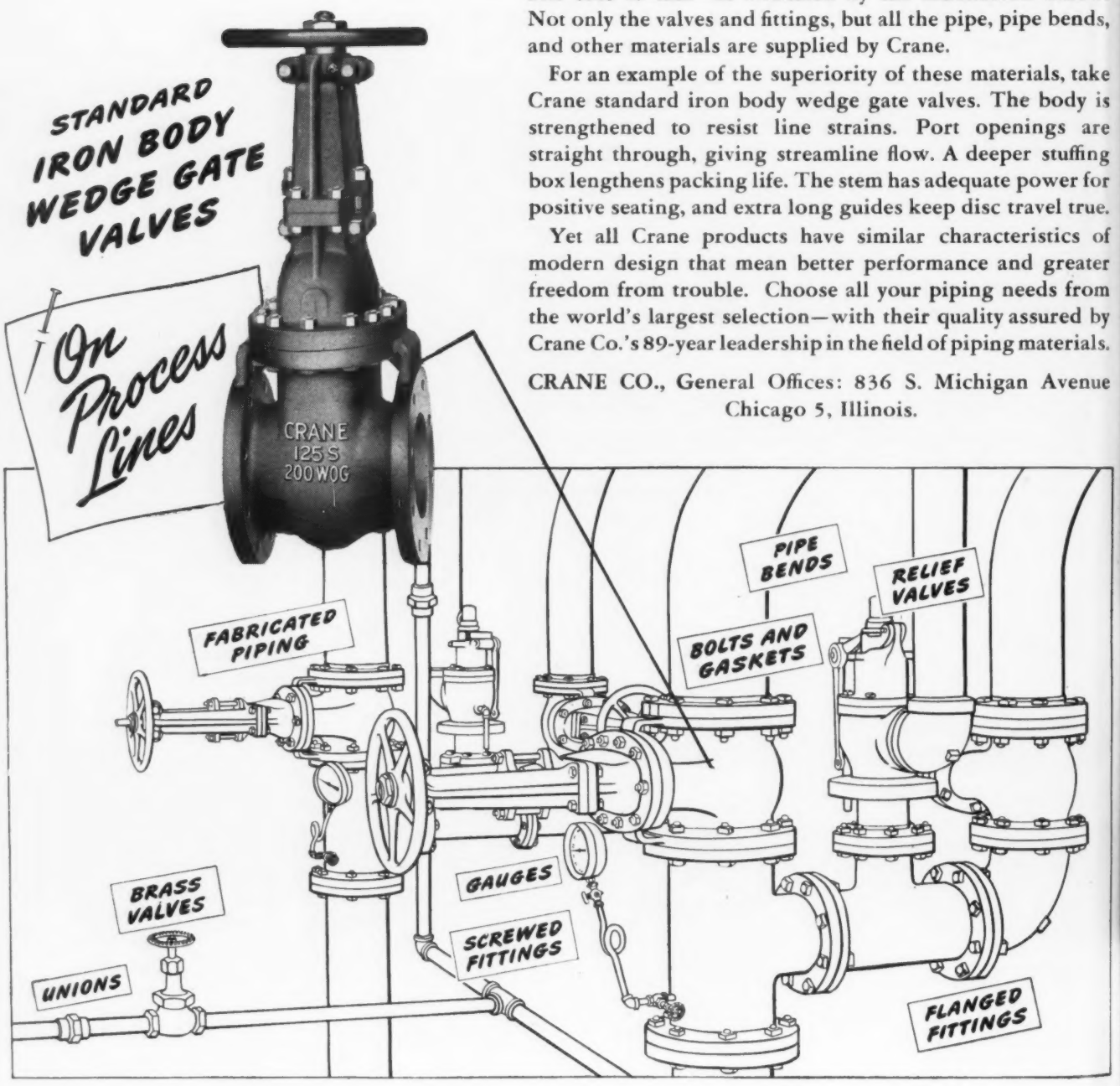
One high standard of quality throughout . . . One source of supply . . . One responsibility for all materials

WHEN you need a single fitting or an entire pipe line, you stand a better chance of getting exactly what you need from Crane. The unusual completeness of the Crane line sees to that—as indicated by the installation below. Not only the valves and fittings, but all the pipe, pipe bends, and other materials are supplied by Crane.

For an example of the superiority of these materials, take Crane standard iron body wedge gate valves. The body is strengthened to resist line strains. Port openings are straight through, giving streamline flow. A deeper stuffing box lengthens packing life. The stem has adequate power for positive seating, and extra long guides keep disc travel true.

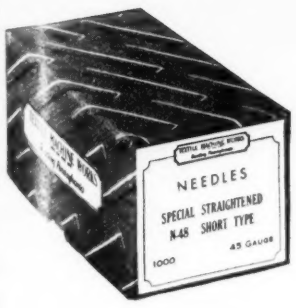
Yet all Crane products have similar characteristics of modern design that mean better performance and greater freedom from trouble. Choose all your piping needs from the world's largest selection—with their quality assured by Crane Co.'s 89-year leadership in the field of piping materials.

CRANE CO., General Offices: 836 S. Michigan Avenue Chicago 5, Illinois.



CRANE

VALVES • FITTINGS • PIPE
PLUMBING • HEATING • PUMPS



Thrilling Event . . . Every woman knows that every important event calls for stockings that are clear and even in texture. Every hosiery manufacturer knows that money invested in good needles pays big dividends in better knitting results. Keep your Knitting Machines young and effective with TMW Needles . . . *and remember: Regular Reneedling Pays! Let us put your needle bars in shape for faster, more accurate, more profitable knitting.*

TEXTILE MACHINE WORKS • READING, PA.

"It is ill jesting with a joiner's tools."

BENJAMIN FRANKLIN

Until the Victory is Won! . . . The men and experience back of Reading Full-Fashioned Knitting Machines are enlisted for the duration. We *cannot* give you new machines — but we *will* do the next best thing: Our engineers will do their utmost to help you keep your present equipment at highest efficiency. *Let us tell you about our complete reconditioning service and what it means in terms of better fabrics and bigger profits.*

TEXTILE MACHINE WORKS • READING, PA.

ARMY E NAVY

THE WAR DECORATIONS OF TEXTILE MACHINE WORKS

Bur. of Ord. Flag and Navy "E"
July 25, 1941

One Star All-Navy "E" Burgee
January 25, 1942

Two Star Army-Navy "E"
July 25, 1942

Three Star Army-Navy "E"
January 25, 1943

Four Star Army-Navy "E"
January 11, 1944

The permanent insulating material for roofs—

9 parts air

1 part glass

PC FOAMGLAS INSULATION is of cellular construction. It is impervious to many deteriorating agents which attack roof insulating materials. Therefore, it retains its unique insulating qualities throughout the life of roofs on which it is installed.

Since it is glass, PC Foamglas is proof against moisture, vapors, acid fumes, vermin and fire. It is rigid, durable, light in weight, easily installed and needs no maintenance.

When used on roofs, in textile mills, where climatic conditions must be kept under most rigid control, PC Foamglas Insulation has proved its ability to help maintain predetermined temperatures and desired humidity levels.

Its unique qualities also make PC Foamglas the ideal insulation for walls, floors, ceilings, partitions, insulated screens and shields in other plants and buildings. It comes in blocks 12″ x 18″, from 2″ to 6″ thick, packed in cartons.

We shall be glad to send you complete engineering data, charts and graphs which indicate how you can use PC Foamglas roof insulation most advantageously. Just fill in the convenient coupon, drop it in the mail and your free copy of our new folder on PC Foamglas Insulation for Roofs will be forwarded promptly. You incur no obligation.

PC FOAMGLAS

T. M. REG. U. S. PAT. OFF.

PERMANENT INSULATION

9 parts air · 1 part glass

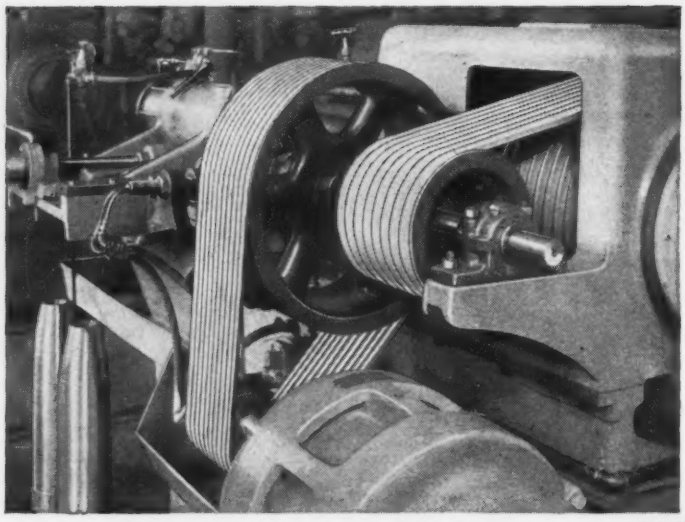
MAIL COUPON TODAY

Pittsburgh Corning Corporation
2089-4 Grant Building, Pittsburgh 19, Pa.
Please send me, without obligation, your FREE literature on PC Foamglas.

Name_____

Address_____

City_____ State_____



*Used in Many Industries

On this machine which profiles the outside of high-explosive shells, Gates V-Belts of special synthetic rubber are used because of their proved ability to withstand bad oil conditions. By actual records, on hundreds of installations where oil or heat conditions are severe, Gates special synthetic V-Belts are wearing 2 times to 3 times as long as any natural rubber belts ever used!

Widely Used* for Over 6 Years

GATES Synthetic Rubber V-Belts

—Have Proved *Superior*

Even to Belts of *Natural* Rubber!

Gates began making V-Belts entirely of synthetic rubber more than 6 years ago. Each year since then, thousands upon thousands of Gates synthetic rubber V-Belts have been making outstanding service records in aircraft factories, in steel mills, in ordnance plants, in machine parts factories—in fact, in practically every type of industrial plant in the nation.

This long *head-start* in the fabrication of synthetic rubber V-Belts was no accident. It was started deliberately, in peacetime and not under pressure of necessity. The synthetic rubber selected by Gates is a very *special* synthetic rubber—not in any sense merely a "substitute" for rubber. In certain very important applications it is *greatly superior* to natural rubber.

For example:—one special synthetic rubber selected by Gates has the unusual characteristic of withstanding oil and heat much better than even natural rubber. Where heat and oil conditions are especially severe, Gates special synthetic V-Belts are outwearing any natural rubber V-Belts by as much as 230%.

Of the very greatest importance to V-Belt users today is Gates' unusually long experience and success in making V-Belts of synthetic rubber. This is especially important now because the time has come when Gates' superior knowledge of synthetic rubber can be put to work for you right in your own plant.

You have only to look in your telephone directory and call the Gates Field Engineer. He will put at your service the full benefits of Gates' knowledge and experience without the slightest obligation.

443

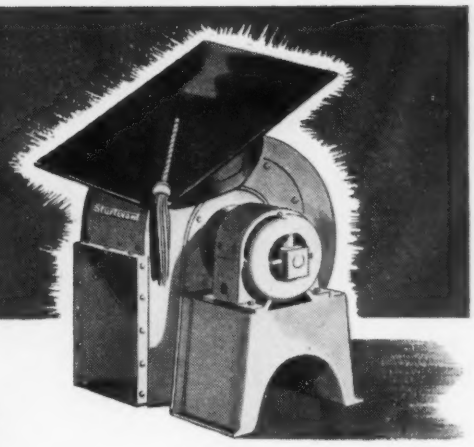
THE GATES RUBBER COMPANY

Engineering Offices and Stocks in All Large Industrial Centers

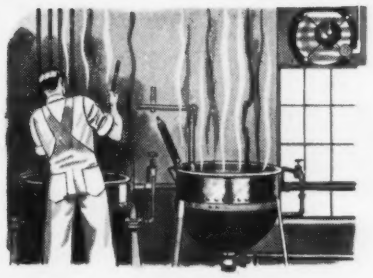
GATES VULCO ROPE DRIVES

CHICAGO, ILL. 549 West Washington
DALLAS, TEXAS 2213 Griffin Street
NEW YORK CITY 215-219 Fourth Avenue
BIRMINGHAM, ALA. 801-2 Liberty National Life Building
DENVER, COLO. 999 South Broadway
CHARLOTTE, N. CAROLINA 507 Builders' Building
GREENVILLE, S. CAROLINA 104 West Washington Street
ATLANTA, GA. 738 C. & S. National Bank Building

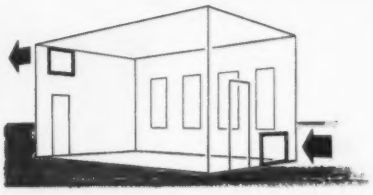
It takes more than a Fan to Educate sluggish Air



1. Ventilating a room sounds simple enough. You put a fan in somewhere to suck out the stale air, heat, fumes, or whatever it is that slows down worker efficiency. This may work, but the chances are it won't . . . because . . .



2. No matter how good a fan you have on the job, it can't pull air out of a room unless provision is made to replace the air. This is one of the basic laws of "air at work". Our specialty is administering these laws.



3. So, installation analysis is the first step. One answer might be simply to cut a slot through one wall into the next room. Another installation might call for the "works" — central distribution systems and auxiliary equipment to cleanse, humidify, and heat or cool the replacement air before it enters.

4. Fan selection comes next. Propeller, centrifugal, or pressure axiflo . . . which is best suited for the supply job? For the exhaust? Because Sturtevant makes all types of fans, we know what each can do best and which is *right* for a specific job.

5. Now, to distribute the air. Supply at the floor level and exhaust at the ceiling . . . or vice versa? It takes long experience with all types of installations to decide. But we doubt if you can find a distribution problem that Sturtevant Engineers haven't already solved for others. If you *can* find one, we're ready to go to work and lick it.

6. Finally, there's the job of coordinating the equipment into an efficient and economical installation. Supply and exhaust fans, Airwashers or Filterwashers, Heating coils . . . all made by Sturtevant and engineered by trained men who know the application of each unit to your ventilation problem.

Sturtevant knows how—and is ready to work on your post-war problems—*NOW*

Almost every industrial area presents some kind of employee-fatigue problem due to atmospheric conditions. Windowless rooms, many workers crowded into small areas, heat-producing equipment, operations that create fumes or atmospheric dust . . . these are the problems which must be solved if goods are to be produced efficiently and economically. Sturtevant is ready to work with your plant engineers or post-war planning committee to start solving these *engineered air* problems now—without obligation.

B. F. STURTEVANT COMPANY • *Hyde Park, Boston 36, Mass.*

Sturtevant

REG. U. S. PAT. OFF.

Puts Air to Work

SYSTEMS and EQUIPMENT

Engineered for Efficiency in

Heating
Ventilating
Air Conditioning
Dust and Fume Control
Pneumatic Conveying
Vacuum Cleaning
Mechanical Draft

Fewer roll renewals— less power consumption

when the Gulf Lubrication Service Engineer is "in the picture"

The effectiveness of textile machine lubrication has a direct bearing on poundage produced and on costs for maintenance and power. That's why a majority of leading mills keep a Gulf Lubrication Service Engineer "in the picture," and follow his helpful advice on their lubrication problems.

By recommending the proper application of the right oils and greases for every moving part, Gulf Lubrication Service Engineers help to lessen wear, decrease end breakage, cut maintenance and power costs, reduce fire hazard and improve production. *They are specialists in scientific lubrication!*

Let a Gulf Service Engineer assist your men in placing the lubrication of your machines on the most efficient basis possible. It is more than likely that improvements can be made. Write, wire, or phone your nearest Gulf office today.

Back the attack... buy **MORE** *War Bonds!*

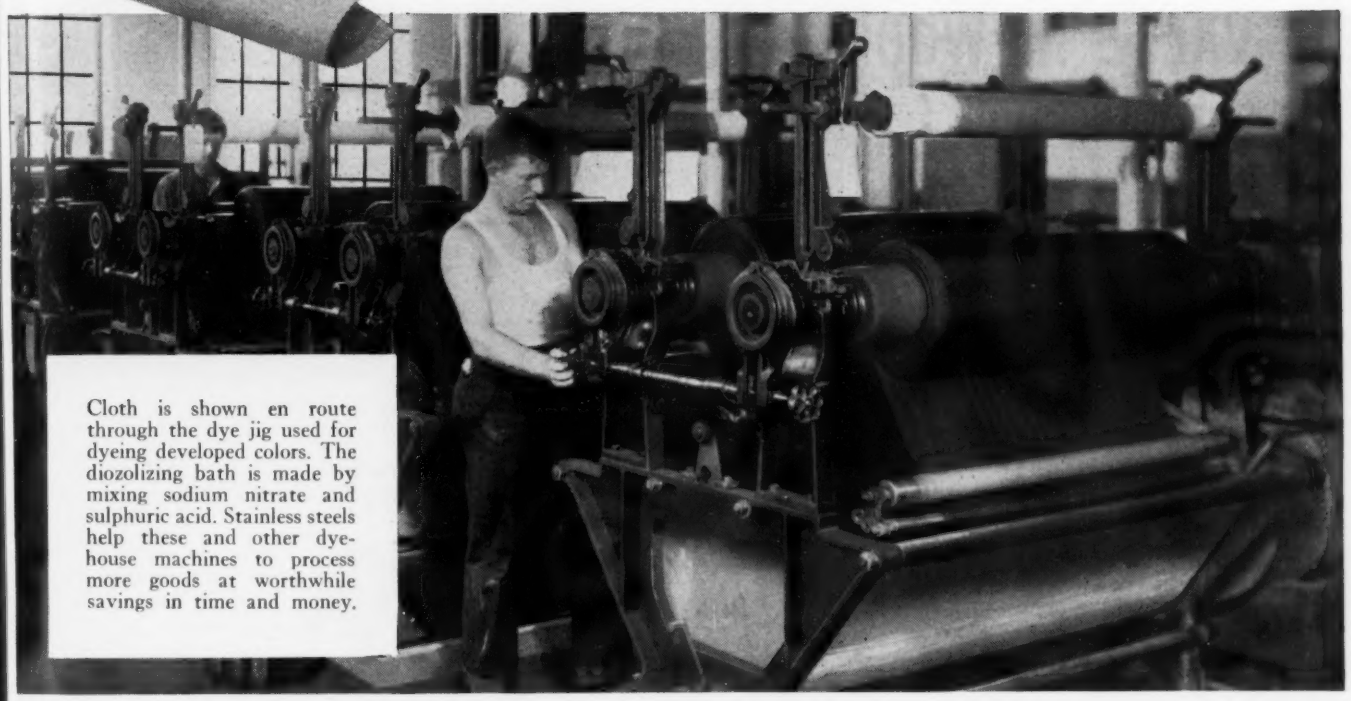
GULF INDUSTRIAL LUBRICATION

Gulf Oil Corporation · Gulf Refining Company
Gulf Building, Pittsburgh, Pa.

DYEING MORE CLOTH

of higher quality · in less time · at lower cost

WITH STAINLESS STEEL



Cloth is shown en route through the dye jig used for dyeing developed colors. The diozolizing bath is made by mixing sodium nitrate and sulphuric acid. Stainless steels help these and other dye-house machines to process more goods at worthwhile savings in time and money.

UNDER the pressure of peak production, dye-house equipment must be pushed to the limit to meet today's requirements. With ordinary equipment you can't maintain quality and quantity standards, fight rust stains, bleeding and other causes of spoiled cloth. That is why stainless steel equipment is so widely used in the up-to-date, efficient dye-house.

Stainless Steel is impervious to the corrosive elements in dye liquor. It also prevents metallic contamination of the liquor. The result is longer runs of bright, uniformly true color — quicker color changes without long delays for cleaning—no danger of "canker" or copper sulphide stains.

Dye-house equipment made of U·S·S Stainless Steel actually stabilizes the dye bath, can be pushed beyond ordinary limits without too frequent repairs or maintenance, lasts so long in service, prevents so much spoilage, saves so much labor cost, that it practically pays for itself.

Wherever wet metal touches cloth, in tanks, tubs, rolls, size pans, kiers, jigs and dry cans—in agitators, piping, washing and sizing machines—equipment made of inert, immaculate, U·S·S Stainless Steel speeds up the work, cuts down cleaning time and materials, stands up under high pressures and temperatures — *indefinitely*.

Before you make necessary replacements or order new dye-house equipment, be sure to consult our technical staff. They will be glad to advise you—and your chosen fabricator of equipment—on the various grades of U·S·S Stainless Steel which are especially designed to meet your individual requirements.

USS UNITED STATES STEEL

U·S·S STAINLESS STEEL

SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

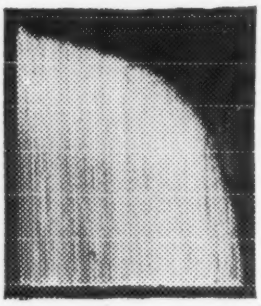
AMERICAN STEEL & WIRE COMPANY, *Cleveland, Chicago and New York*
CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago*
COLUMBIA STEEL COMPANY, *San Francisco*
NATIONAL TUBE COMPANY, *Pittsburgh*

United States Steel Supply Company, Chicago, *Warehouse Distributors*
United States Steel Export Company, New York

RAYON REPORTS

Published Monthly by American Viscose Corporation, New York, N. Y. MARCH, 1944

VARIED LENGTH RAYON STAPLE OF VALUE IN WOOL BLEND TESTS



Varied length rayon staple fiber has decided advantages for worsted and woolen mills, as pointed out in a recent statement by the Textile Research Department of the American Viscose Corporation. The statement follows:

"Many manufacturers have made experimental yarns by very carefully sorting wool and selecting only the longer fibers and have thus been able to spin superior yarn. No one, however, could sort carefully enough to get a diagram in which the fibers are all one length. A sloping diagram would still result, but one in which very few short fibers are present. This very point, controlled non-uniformity of length is, we believe, the reason for the successful outcome of their experiments with carefully selected wool.

"Our reason for this belief is further strengthened by the results of spinning experiments conducted with rayon top of uniform length compared with tops of the new varied length rayon staple. In both cases, the rayon top was white and each was blended 50/50 with the same lot of black wool. This contrast allowed us to study the blending that followed each operation.

"The thoroughness of blending was in favor of varied staple length in every operation, and the final proof was strikingly demonstrated in fabrics containing each type of rayon. In addition to thoroughness of blend, the yarn containing varied length rayon was of more uniform diameter and resulted in lower burling and mending operations. These features have been substantiated by customers who are regularly using our varied length Fibro."

A.V.C. OPENS WASHINGTON OFFICE

The American Viscose Corporation has opened a Washington, D. C., office located at 504 Hibbs Building, 15th Street, N. W. Purpose of the new office is to serve as a liaison between the plant sales offices, and staff departments of the corporation and their Washington contacts.

A.V.C. RETIREMENT PLAN APPROVED

A retirement plan for employees of the American Viscose Corporation has been approved by the Commissioner of Internal Revenue and stockholders of A.V.C. and has gone into effect.

The plan is intended to supplement old-age benefits under the Federal Social Security Act, and provides for a retirement income for employees who reach the age of 65 years.

VINYON** E BANDAGES NOW BEING DISTRIBUTED

Elastic bandages made from Vinyon E, a relatively new yarn developed and produced by American Viscose Corporation,

are now on the market. They are manufactured by Becton Dickinson and Co., Rutherford, N. J. Vinyon E can be stretched to three times its original length. Until recently, it was confined entirely to military purposes, woven into surgical stockings and knee braces, tapes, cords, belts, and other articles needing elasticity.

NEW LICENSEES

American Viscose Corporation has appointed Cameo Fabrics, Cantor Greenspan Co., Inc., Meadtex Fabrics Co., Yale Fabrics Corp., all of New York, as converter licensees under the CROWN Tested Plan, under which fabrics containing CROWN rayon are laboratory tested for service qualities.

Beaunit Mills, Inc., Lowell, N. C.; The Hampton Co., East Hampton, Mass.; The Kenyon Finishing Co., Lawrence, Mass.; Sanco Piece Dye Works, Inc., Phillipsburg, N. J.; Stonecutter Mills Co., Inc., Spindale, N. C.; Brewster Finishing Co., Inc., Paterson, N. J.; Waldrich Co., Delawanna, N. J.; have been appointed finisher licensees. Each of these is qualified to dye and finish rayon fabrics in accordance with the requirements established under the CROWN Tested Plan.

GLOSSARY OF RAYON FABRICS PUBLISHED

A new booklet, "RAYON FABRICS — *Definitions of Rayon Fabrics and terms used in connection with Rayon*"—has recently been published by the American Viscose Corporation. This glossary will provide a broader and more accurate knowledge of rayon fabrics and terms. To receive a copy, simply address your request to American Viscose Corporation, 350 Fifth Avenue, New York City.

**T.M.—C. & C.C.C.

MAKE USE OF 4-PLY SERVICE

1 **PRODUCT RESEARCH**
Helps you get the right yarn.

2 **FABRIC DEVELOPMENT**
Helps you design new fabrics.

3 **TEXTILE RESEARCH**
Helps solve production and finishing problems.

4 **"CROWN" TESTED**
Helps provide scientific selling facts.

AMERICAN VISCOSE CORPORATION

Producer of
CROWN* *Rayon Yarns and Staple Fibers*

Sales Offices: 350 Fifth Avenue, N. Y. C. 1; Providence, R.I.; Charlotte, N.C.; Philadelphia, Pa.

Plants at: Marcus Hook, Pa.; Roanoke, Va.; Lewistown, Pa.; Nitro, W. Va.; Parkersburg, W. Va.; Meadville, Pa.; Front Royal, Va.

CROWN TESTED RAYON FABRIC

*Reg. U. S. Pat. Off.

This Mill would run without Humidification

But — static electricity, inadequate regain, ends down, dust and fly *plus* employee discomfort would drag production down and down.

Correct humidification is a necessity in today's high speed production. Practically every new development, every speed-up in textile machinery multiplies the need for expertly planned humidification systems.

It calls for a type of engineering that comes only from long experience with textile mill problems and processes, exposures and a dozen other factors. *A poorly engineered system can be as bad as no system at all.*

We have been at it a long time. Perhaps that is why the majority of mills have an AMCO Humidification System. We'll be glad to help you put *your* mill in a good "competitive" position for the post-war period.

Naumkeag Steam Cotton Company
Owners and Operators
Pequot Mills, Salem, Mass. — Danvers Bleachery, Peabody, Mass.

AMCO
Self-Cleaning
Atomizers

AUTOMATICALLY SELF-CLEANING
•
CONSTANT, FULL-CAPACITY DELIVERY
•
NO DRIP—NO FEATHERING DOWN
•
MINIMUM MAINTENANCE COST
•
LONG LIFE

AMCO HUMIDIFICATION

AMERICAN MOISTENING COMPANY, Providence 1, R. I. • Atlanta • Boston • Charlotte

"Pursley Doesn't Seem to Grasp This Paper-Saving Idea"

Pursley's "doodling" may not seem very important in itself—but this widespread bad habit is today wasting many a ton of good white paper.

It's worth-while to check up on such practices now that paper is a vital material of war . . . with 25 tons of blueprint paper required to make a battleship and 12 pounds of paper for every 500-pound bomb.

Here are ways in which form users can save paper:

1. Design forms to use fewer parts of smaller size
2. Reduce weight of paper stock
3. Correct minor errors—don't use a new form
4. Don't buy in too large quantities

—and don't forget whenever you use paper:

Don't throw away slightly damaged or soiled stationery
Use both sides of the sheet
Design printed matter to use less paper
Prune the "deadheads" out of mailing lists

Remember, paper saving is in the national interest—and it's a job in which YOUR co-operation is needed. Let's all starve our wastebaskets and make each piece of paper stretch farther.

UARCO
BETTER BUSINESS RECORDS

UNITED AUTOGRAPHIC REGISTER COMPANY
Chicago, Cleveland, Oakland • *Offices in All Principal Cities*

USE LESS—SO OUR FIGHTING FORCES WILL HAVE MORE

Disposal of Government Inventories

How to dispose of government surpluses when the war ends need not be an insuperable problem – if we face it promptly and intelligently. But if we do not, peacetime markets may be disrupted, government funds wasted, production discouraged, and reconversion of the whole economy to peace seriously hampered.

What we need most in order to attack the problem is estimates of how much surplus there will be, in what types of goods, and where.

At the war's end, government inventory of war goods is likely to total around 60 billion dollars. Most of this will consist of aircraft, ships, and other ordnance. Only some 15 billion dollars or less will be in food, clothing, trucks, tools, chemicals, medical supplies, transportation, engineering and communication equipment, and other goods for which there is a civilian market.

In addition, war contractors will have about 10 billion dollars of inventories, the bulk in specialized raw materials, goods in process, and finished products. Only about one-fifth of the total, or some 2 billion dollars, will be marketable or usable for civilian purposes. While the government takes over the usable inventory, the ex-war-contractors will have to build up their stocks for peacetime production, so that on balance, they will not be disposing of usable inventories in large volume.

Not even all of the usable war-end inventory will be "surplus" for sale to civilians in competition with new production. Some of it will be needed by the sizable peacetime Army and Navy we are likely to maintain, and such additional items as can be stored without serious deterioration or obsolescence will be held against possible future war emergencies. Some of it will be disposed of abroad. And up to half of it will be abroad and may be sold there or used for relief.

After allowing for these factors, the war supplies to be disposed of in our own markets probably will be less than 10 billion dollars (cost basis). While the total is not overwhelming – the equivalent of two months' retail sales – in certain lines the surplus will be several years', instead of a few months', normal supply. In particular, the volume of scrap metals available from otherwise unusable munitions will present a problem.

A great deal can be done now to reduce the size of the postwar surpluses by achieving a better balance between military needs and supplies and avoiding excessive inventories of particular raw materials or finished goods. This work needs to be pressed, not only to simplify our transition to peace but also to prevent wasting productive energies during the war. Furthermore, when the war ends on one front, inventories of war materiel should be worked down to the reduced scale of remaining military activity.

We cannot develop programs of action until we know approximately how much of each type of item is to be sold, and where and when it will be available. Wide margins of error are inevitable as long as large-scale procurement and large-scale consumption are still taking place; yet such information is essential and must be developed. Indeed, improved inventory records and estimates are badly needed for the conduct of the war as well as for managing the surpluses after hostilities cease.

In decisions on the disposal of war-goods inventories, the public interest must be the prime consideration. Proposals that none of these goods should be sold domestically because of competition with new production obviously are untenable. Everything that is not needed by the Armed Services or for other special purposes should be disposed of ultimately. The real problem is not whether surpluses should be sold, but rather to whom, at what price, and at what time the sale should be effected.

In the distribution of such large quantities of goods, we believe that established trade channels should be used wherever possible. Otherwise, we shall witness widespread speculation in war goods and the mushroom growth of inefficient and disruptive fly-by-night distributors. This will benefit only a few speculators and will discourage legitimate producers and distributors from making their normal commitments.

All war contractors should have the privilege of retaining those inventories for which they are willing to pay actual cost or a fair price negotiated with the gov-

ernment procurement agency. The balance of the inventories in the hands of war producers should be assembled by the government and sold in an organized manner. It is of great importance that the plants be cleared of these inventories at once so that the process of conversion to peacetime operation can proceed without further delay. To accomplish this, preparations must be made before the end of the war for speedy determination of the inventories to be moved and for a huge volume of storage space to accommodate them.

The price which can be realized and the timing of sale are closely related. Certainly the best prices will not be secured if the government attempts to dispose of large supplies of material and products suddenly without regard to market conditions. Most businessmen rightly favor an early transfer of surplus inventories from government to private ownership. But, they also realize that if all the surpluses are dumped indiscriminately as they become available, many markets will be badly depressed, and the resulting low prices will bring lower production. If this depression effect becomes general, as it easily can, it will be costly to the nation in terms of jobs, income, and goods.

In industries in which production is inadequate to meet postwar demands, an immediate sale of government inventories can prevent inflated prices and preserve balanced market conditions. In cases in which the surpluses are large in relation to annual production, the disposition can be scheduled over a period of years. Generally, however, it will be best to clear the surpluses as quickly as orderly sale can be accomplished rather than to leave them as a continuing threat overhanging the market. Most industries can, and should, take the disposal process in their stride without special dispensations from the government. In this connection, it should be noted that the tax provisions for carry-back of losses and excess profit credits after the war greatly increase the possibilities for speedy disposal of surpluses without serious injury to producers.

There will be some industries, however, in which the postwar surplus is so large that it would practically saturate the market for years to come. The problem of these industries is further complicated by their wartime expansion of capacity many fold in excess of peacetime requirements. These lines of production are, moreover, crucial for our national defense. Aircraft and shipbuilding are cases in point. Each of these situations calls for careful study and discussion by all concerned to devise means to keep alive the necessary production organizations, the research effort, and the spirit of enterprise. Insofar as possible, the individual manufacturers should work out their own salvation in the conversion to peacetime markets. They can do this by taking on new lines, by increasing their production efficiency, and by developing technical improvements which make the existing inventories obsolete. But they still will need some kind of government protection or assistance while the huge surpluses are being worked off. It is most important, however, that such protection or subsidy be limited to a period of three to five years. It must not become permanent unless it is really essential for our national security.

The disposal of surplus inventories is part of the whole process of demobilization of the war effort and conversion to peace. If this process is to be accomplished with minimum dislocation and injury to our economy, it will have to be directed by a central agency which has developed adequate information service and is in position to coordinate the policies of the Armed Services and the other interested executive branches of the government. This agency should draw freely on the knowledge of businessmen in the specialized problems of marketing surpluses in each industry. It should formulate definite programs of inventory disposal for all industries in which the problem is acute; and it should make these programs public as soon as possible, so that business can plan for the future with confidence. In large measure, the success with which we make the economic transition to peace will depend on the quality of government administration in the process of industrial demobilization. We shall need better organization for the transition to peace than we had in mobilization for war if we are to avoid needless unemployment, loss of production, and frustration of business enterprise.

President, McGraw-Hill Publishing Company, Inc.

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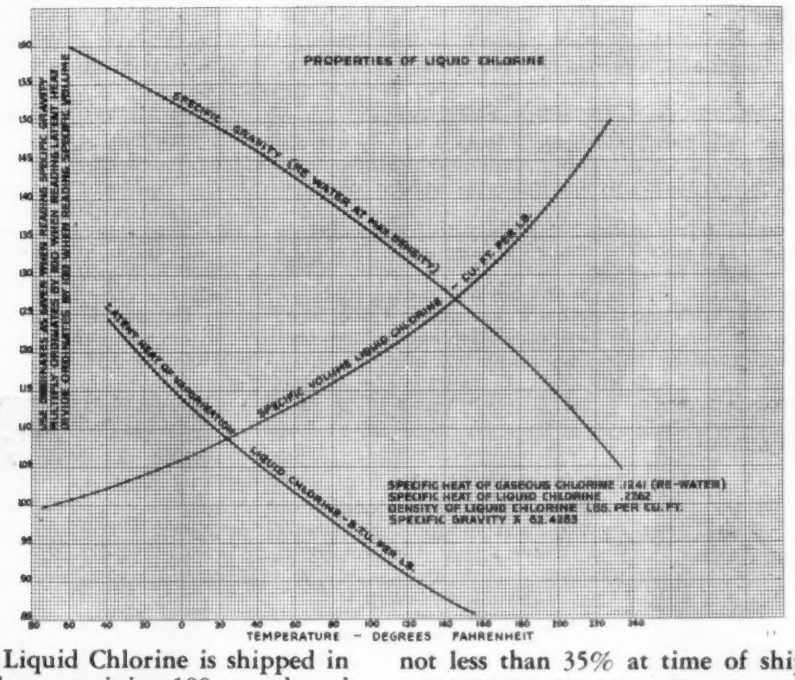
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LATENT HEAT OF VAPORIZATION
LIQUID CHLORINE
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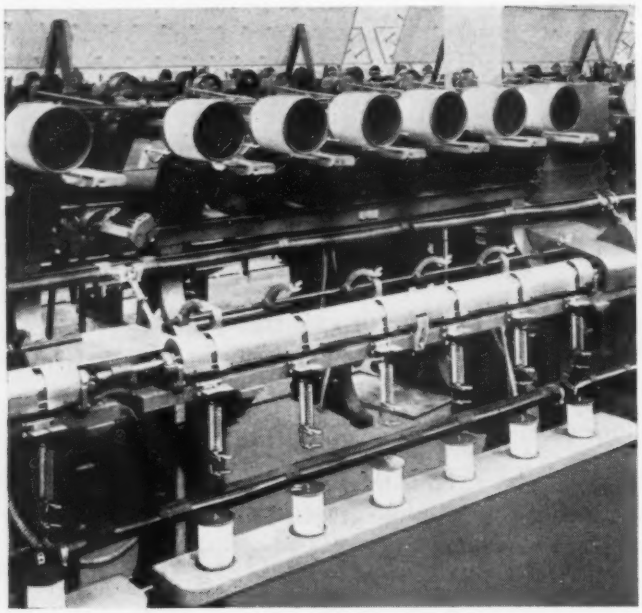
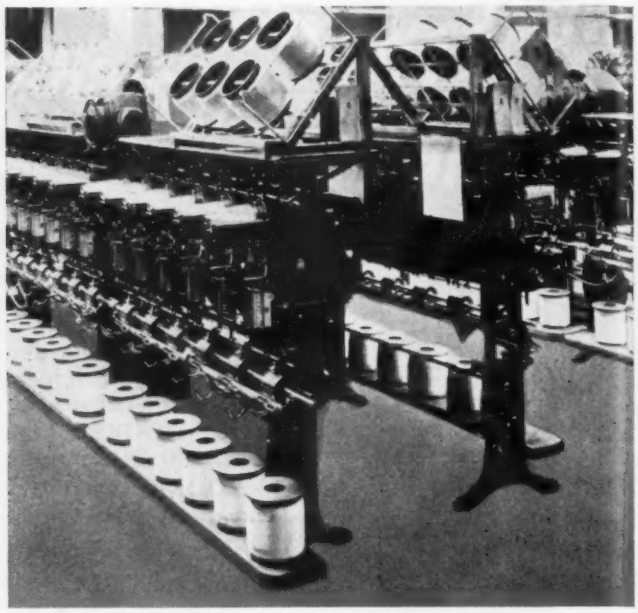


This is the machine that sizes the yarn

The Universal No. 250 Nylon Sizing Machine applies a definitely-controlled percentage of size and winds onto large-diameter tubes in which the yarn is evenly and thinly distributed for rapid and uniform conditioning.

Tension is applied *before* sizing. Since the yarn travels almost in a straight line and since the change in yarn speed is slight, there is little variation in tension.

The machine is extremely rugged and has few moving parts — with the result that vibration is virtually eliminated. Use of four winds across the traverse limits yarn oscillation and reduces the movement of reciprocating parts, thus minimizing wear.

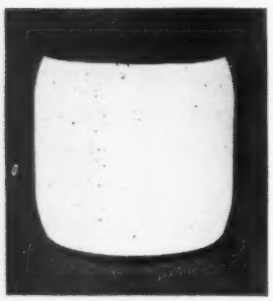


This is the machine that winds the knitting cone

The Universal No. 50 Winding Machine applies an emulsion to the yarn in easily-controlled amounts and then, by means of the Universal Pineapple Cone Attachment, winds pineapple cones of predetermined shape.

Tension remains low. The yarn travels up from the supply tube, through an auxiliary tension guide and past the Emulsion Roll in nearly a straight line. Yarn contact points are few in order to minimize friction.

The simple Pineapple Cone Attachment designed for this machine has the Roller Bail, kept true-running by the reinforced Roller Bail Holder.



This is the sizing tube

The tapered ends, produced by the "scatter-wind", provide free delivery on the coning machine.

No re-draw is necessary.

This is the knitting package

The Pineapple Cone is considered the ideal shape for a package supplying knitting machines with nylon yarns.

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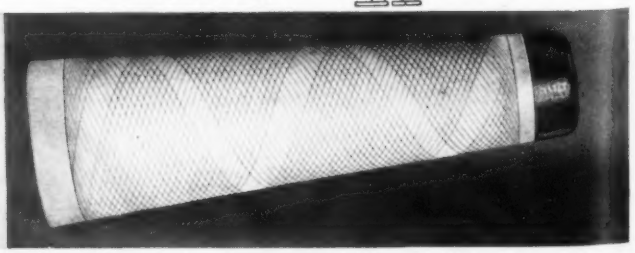


Bigelow-Sanford Labor-Management Committee in session, four representatives of Labor, four of Management.

LABOR-MANAGEMENT COMMITTEE Boosts Production and Morale

HIGHLIGHTS: Committee at Bigelow-Sanford Has Numerous Specific Achievements—New Suggestion System Is Showing Results—Broadened Membership of Committee Aided Effectiveness—Benefits for Future.

By
A. JACKSON GREEN

Chairman, Labor-Management Committee
Bigelow-Sanford Carpet Co.

IT IS AS FAR A CRY in a war conversion program from manufacturing rugs and carpets to making blankets, duck, gun turrets, mounts, and other ordnance materials, as it is from antiquated labor delegates and mill bosses to modern streamlined Labor-Management Committees.

The conversion of Bigelow-Sanford's huge textile manufacturing plant to war products differed from the conversion of many industries in that carpet and rug making types of machinery could not be replaced or stored, but had to be adapted for products foreign to the machine and at the same time acceptable to the Quartermaster. In an ever-expanding program, included in which was a complete machine shop developed to meet the demands of war production, experimentation on these new developments was instituted early in 1941 and acceptable war materials were manufactured prior to Pearl Harbor.

STARTED IN 1942. Bigelow-Sanford, alert to the fact that all changing needs were not limited to machinery, was one of the first in Connecticut to anticipate the advantages to the war effort in the new form of Labor-Management relations. Early in May 1942, a Labor-Management Committee was set up in that organization composed of two representatives of Labor and two of Management. Meeting weekly, it followed the regular pattern as laid out in the brochure from the Donald Nelson War Production Drive Committee. All of the listed headings and functions were set up, with greater production as the committee's goal — harmony, teamwork, and establishing goodwill, were

the prime factors in its existence. The skeleton of the program follows:

1. Arrange for necessary committees: material conservation; transportation; bond sales; publicity, posters, slogans; suggestions; training; safety, health, fire prevention; production; absenteeism.
2. Arrange for erection of production scoreboards.
3. Make a study of plant efficiency.
4. Put up suggestion boxes.
5. Set up bulletin boards for posting special communiques.
6. Establish a production news distribution.
7. Subcommittee on posters.
8. Start a slogan contest.
9. Check subcontractors and supplies through Labor-Management Committee.
10. Submit regular reports to Production Drive Headquarters, Washington, D. C.

Through catch-as-catch-can, trial and error, fuss and fumble methods, the committee muddled through the first twelve months, gradually overcoming the travail of birth and establishing a firmer understanding of its prerogatives and privileges.

Among the established results from the committee's work are the following: share ride campaign of "More Ride on Less Rubber"; new lunchroom servicette; new smoking-room for workers; protected area for night drivers; large honor-roll; mechanical entrance-gate sign, "This is a War Plant"; a war production bulletin; "Hike a Bike to Work" campaign; plant drives, including War Bonds, Safety, etc.; transportation center; suggestion system.

Plant's "Honor Roll", another result of L-M Committee.

Well-dramatized race between departments on war-bond subscriptions.

Servicette installed as result of recommendation of L-M Committee.

SUGGESTION SYSTEM. In the suggestion system which was instituted, the three classifications which establish the basis upon which the company pays all suggestion awards, follow:

A. Extraordinary cases, involving research tests or large amounts of savings, to be paid for as result of negotiation.

B. Minor improvements in quality, production, transportation, upkeep, etc., to be paid on the basis of 33⅓% of the annual savings.

C. Minor suggestions, where the savings cannot be definitely figured but where the thought in the suggestion can be used and is put into operation, to be awarded a $25 War Bond.

Receipt of the suggestion is followed up with a questionnaire to the overseer involved, who must present this suggestion back to the Labor-Management Committee at the earliest possible date. The questionnaire follows:

"1. Has the suggestion a practical value? Explain in detail.

"2. Will production be increased; will there be a saving of material or labor? If so, furnish estimate of amount of savings or an exact calculation if possible.

"3. Are there any other advantages, such as elimination of hazards, or improvement of product?

"4. Do you intend or expect to use this idea either in the suggested form or some modification of it?"

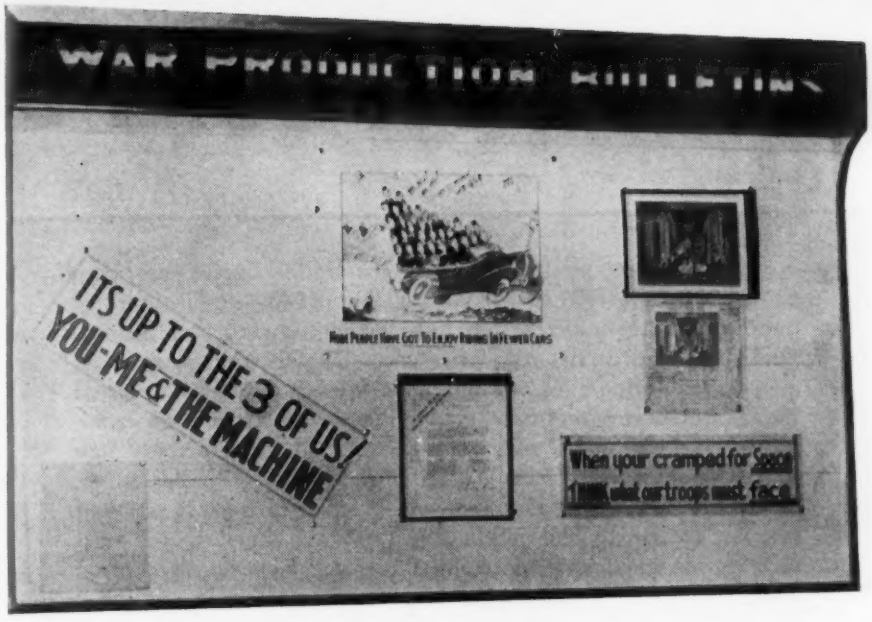
In case of disagreement between the head of a department and the committee as to the value of a suggestion, the head of the department and the person making the suggestion shall both be called before the committee to discuss the suggestion and the committee will arrive at its true value. The committee expects the overseer to use all the facilities of the engineering department to assist him in the report.

During 1942, 26 suggestions were received and considered and no awards were paid. During 1943, 44 suggestions were submitted, to nine of which monetary awards were paid, as follows:

Class "B" Awards: $425 in War Bonds for winding beams by the take-up method, time saving in tying duck beams; $50 bond and $2.50 in War Savings Stamps for the use of two cutting tools on the head of a planer of flapper box.

Class "C" Awards (to each a $25 bond): device on looms to prevent shuttle breakage; device to slide carpet rolls into bags for baling; device to prevent wooden plugs from flying off spindles and warper creels; device for making spiders for tap looms from scrap steel instead of cast iron, resulting in less breakage; safety device for switch buttons; drag on rolls of blanket-beaming machine; cardboard cover over bolts on camouflage net baling machine.

BROADENED MEMBERSHIP. When it began to have growing pains, the



Bulletin board for current slogans and posters (at left).

Sticker for windshield of Bigelow-Sanford employees' cars.

Safety Record Board giving current "No-Hurt Parade" and previous records of various departments to shoot at.

Labor-Management Committee felt it had established its place in the organization and desired to broaden its influence. This was accomplished through the cooperation of top management and labor representatives. A complete reorganization was the direct result, which proved to be the most progressive step undertaken so far in the whole program. A rotating system of attendance was arranged and a schedule set up for regular attendance. The membership comprised the same permanent committee of two Labor and two Management representatives with a selection from a rotating group totaling ten overseers and ten representatives of labor. The schedule is so arranged that each member sits in the group for at least four meetings. At no time does labor sit in with its own management. Each weekly meeting has eight representatives in session.

This enlargement of the committee resulted in widening the interest in its work, and was extremely helpful in creating better understanding of Labor-Management relations. The change seemed to overcome the tendency to belittle the efforts of the Labor-Management Committee. Labor has since been much more interested in the program, and all are learning a great deal from the contact with the membership of the committee. Considerably less griping results and Management shows a greater interest in the expressions of opinion by the Labor group. A pronounced stimulus to greater production and higher morale was the immediate outcome.

LABOR-MANAGEMENT HERE TO STAY. Now that the committee has reached maturity, a few observations in retrospection might not be amiss.

First—The organization believes that Labor-Management is here to stay, and that big business in the future will develop around the table of better understanding.

Second — Better education and broadening of influence through the rotating system of attendance will constantly widen the interest plantwise.

Third—The expansion of the committee and the suggestion system set-up have added impetus to the number of worthwhile suggestions submitted, which seems to indicate confidence in the award plan.

Fourth—The group is constantly mindful of methods, shortcuts and improvements which aid in the faster development of a better product, thus reducing costs and establishing a safer margin for competition.

Fifth—In human relations, both Management and Labor seem surprised that both buy groceries and ketchup at the same A & P store, laugh at the same jokes, and, stripped of mill influence, talk the same language. All are primarily interested in the security, comfort and happiness of a decent home and a community in which to live, while sacrificing uncomplainingly for the war effort.

Finally—Through the opportunity of self-expression by Labor and Management, a better understanding of each other's welfare and happiness results. What the future holds for the committee as it grows older in experience and usefulness to the company can only be solved by the plant slogan, "Time Marches On." It is believed however that the Bigelow-Sanford Labor-Management Committee and its influence on the worker is here to stay.

Note: WPB recommendations with respect to Labor-Management Committees were reported in the December, 1943, Textile World, page 64. Results attained by the Committee at Avondale Mills were described in the same issue, page 67.

RUNNING RAYON STAPLE on

HIGHLIGHTS: Selecting Proper Deniers and Staple Lengths — Processing at 58% Relative Humidity and 78° F. Recommended — Usual Opening and Cleaning Processes Unnecessary — Hints on Tinting and Blending — Beater Speeds of 600 R.P.M. Produce Well-Formed Laps with Little Damage to Fibers.

Production of rayon staple fiber in the United States rose from 51,000,000 lb. in 1939 to 162,000,000 lb. in 1943 — an increase of over 200% in 4 years. It has been estimated that in 1950 production will be at the rate of at least 500,000,000 lb. annually. At present cotton mills are consuming by far the largest part of the output of rayon staple, and it appears certain that in the postwar period more and more cotton manufacturers will turn to the production of spun-rayon yarns. In line with this trend, TEXTILE WORLD is presenting here the first of a short series of articles describing the methods which have been found most suitable for handling rayon staple fibers and blends on the cotton system. Fletcher S. Culpepper, the author of this series, heads the cotton division of the Textile Research Department of American Viscose Corp., one view of which is shown in the cover photograph. In addition to conducting research work at Marcus Hook, Mr. Culpepper has served as a consultant on manufacture of spun rayon and spun-rayon blends in many textile mills, and is regarded as one of the leading authorities on this subject.

I. Opening and Picking

RAYON STAPLE FIBER still enjoys its broadest application on the cotton system, although it is now used considerably by the woolen and worsted trade. Rayon staple fiber is an extremely versatile fiber, and, due to this fact and to the ingenuity of the cotton industry, it is finding its way into many new fabrics. This tendency, coupled with improved fibers of tomorrow, makes it logical that the use and acceptance of rayon staple fiber will continue to grow immensely in the postwar period.

Rayon staple fiber, in several types, seems ideally to fit the machines of the average cotton mill without major mechanical changes. However, for some types of fabrics, mills have seen fit to equip their plants especially in order to broaden the scope of their production. At the present time, cotton mills are commercially running such types as 1 den. 1⅜ in., 1 den. 1⅞ in., 1.25 den. 1⅞ in., 1.5 den. 1 in., 1.5 den. 1⅜ in., 1.5 den. 2 in., 3 den. 1¼ in., 3 den. 1⅜ in., 3 den. 2 in., 3 den. 2½ in., 5.5 den. 1 in., 5.5 den. 1⅜ in., 5.5 den. 2 in., 5.5 den. 2½ in. The above-mentioned types, bright and dull, used in 100% form and in blends with other fibers, permit a wide range of fabrics.

Very fine staples, such as 1 and 1.25 den. were designed for, and are principally used in, the fine-goods field. Today, these types are being spun into yarns as fine as 100/1 for such fabrics as broadcloths, lawns, handkerchiefs, and voiles. It may be stated, however, that types such as these require careful handling, as does fine long-staple cotton, if good-quality yarns and fabrics are to be produced.

The 1.5-den. 1⅜-in. and 1.5-den. 2-in. types have been generally more familiar to the cotton mills in the past. These types have achieved wide success in fabrics requiring counts of medium range, up to 50/1. They have been used extensively in such fabrics as challis, fugi, hopsacking, twills, and various types of goods where medium softness is desired. They are comparatively simple to process on the cotton system, and, for this reason and due to their fineness, are used to improve the running qualities of rather difficult blends containing 3-den. and coarser fibers.

The 3-den. type in various lengths —1¼ in., 1⅜ in., 2 in., 2½ in.—has gained wider acceptance during recent months. This type produces fabrics that have a more crisp or lofty hand than 1.5-den. staple. The 3-den. staples are used extensively in blends with wool, acetate, and other fibers for suiting fabrics. The 3-den. 2½-in. staple has increased the limit of spin over previous lengths, thus increasing the range of goods that can be made. Fabrics produced from this type include medium-weight suitings, gabardines, and other fabrics where medium crispness is desired. The limit of spin of 3-den. staple is considerably less than for the 1.5-den. staple. Under ordinary circumstances, it is not practical to spin counts finer than 30/1 from 3 den.; even then 2½-in. staple is preferable.

The 5.5-den. types are not used a great deal in 100% form, but are employed principally in blends where a considerable amount of crispness, or roughness, is desired. The limit of spin of these types is so low that it limits the type of fabrics in which it can be used successfully in high percentages. Generally speaking, it is not practical to spin yarns finer than 14/1 from fibers as coarse as 5.5 den. when used 100%.

Longer lengths produce better spinning in the upper range of counts, due to the increased ability of the fibers to adhere to each other.

HUMIDITY IMPORTANT. Proper control of temperature and moisture during conditioning, processing, and testing must be maintained if consistent results are to be obtained. Lack of control of these factors results in non-uniform processing; however, this should not be confused with the quality of the staple fiber.

Viscose rayon staple reaches its

Rayon Cotton System

By FLETCHER S. CULPEPPER

normal commercial regain of 11% at approximately 58% relative humidity and 78° F. These same conditions are satisfactory for the processing of staple fiber from picking through spinning. In the carding and spinning departments, low humidities result in an increased amount of fly and static, while higher humidities will cause the fibers to become sticky and to draft unevenly. In this connection, also, uneven yarn has actually been traced to too much humidity in the spinning room. A relative humidity of around 65% is quite satisfactory for weaving. In the weaving department, excessive humidity will increase the likelihood of set marks when looms are started after a normal stop.

In order to control closely weights, drafting qualities, and fly, it is of utmost importance that the humidity conditions throughout the mill be kept as nearly uniform as possible. This is due to the fact that rayon fibers are more susceptible to moisture changes than are most of the natural fibers.

Testing of spun-rayon yarns must be carried out under controlled conditions in order to obtain comparable results from day to day. Since an increase in relative humidity results in decreased yarn strengths and decreased relative humidity in increased yarn strengths, it is highly important that the conditions be accurately controlled.

OPENING AND CONDITIONING. Rayon staple fiber is subjected to an opening treatment by the producers, and it is neither necessary nor desirable to subject fibers to a preliminary opening treatment similar to that used on cotton. The opening given the fibers by the producers is usually sufficient for the complete by-passing of preliminary opening equipment in cotton mills. It is well to pass the stock through hopper feeds prior to processing, so that lumps caused from baling pressure can be removed. It is also well, where space permits, to pass the stock through hoppers prior to conditioning, since opened stock equalizes its regain in much less time than stock in bale form. If space does not permit the conditioning of mildly opened stock, it is well to remove the bands from the bales to allow the stock to condition in layer form for 10 to 12 hrs. It is definitely an advantage to provide space for opening as many bales as possible so that cross-blending of bales may be accomplished after the stock has been conditioned.

Rayon staple fiber requires no cleaning. It is harmful to use cotton-type cleaning machinery on it. This tends to break fibers, create neps, and generally to roll and damage the staple.

Table I. Recommended picker settings from face of 2½-in. feed roll to beater for various staple lengths.

Staple Length	Setting in inches
1	1/8
1 1/4	3/16
1 9/16	1/4
1 7/8	3/8
2	1/2
2 1/2	3/4
3	7/8

Use of rayon staple fiber in blends with various other fibers has made it necessary to have methods of accurately identifying the different blends. Without question, the safest and best method is by the use of fugitive tints.

Utmost care should be used in the selection of tints for various fibers; otherwise, some of the fibers may be permanently stained. Manufacturers of dyes for tinting will furnish information regarding the type of tint for specified fibers. It might be mentioned that a good tint should possess the following properties: (1) It should have good light fastness; (2) It should not interfere with subsequent processes; (3) It ought to be free from impurities; (4) It must be easily removed; and (5) It should not lose its fugitive properties when steamed or conditioned.

TINTING METHODS. There are three tinting methods that are being successfully used at present. One is the spray type applicator which is generally used over a hopper feeder and is controlled so that the spray is automatically stopped when the hopper feeder is not in operation. This prevents over-application of tint at one spot. Either oil or water tints can be applied by this method. Another method is to apply the tint in the beater chamber by use of the Texspray system. In this method, the tint is wiped on the stock as the beater pulls the fibers from the feed roll. The third method is actually to take a percentage of one fiber of the blend and apply the tint in a vessel. This tinted portion is then dried and

Fig. 1. General view of part of the cotton equipment in the Textile Research Department of American Viscose Corp. Full-size conventional machines, shown above, are used in running staple fiber on the cotton system.

blended in with the other constituents of the blend. This method, while requiring special tinting and drying equipment, is quite satisfactory, since several shades of the same color can be used successfully.

Care must be exercised not to apply too much tint. In the case of oil tints, an excess amount will cause no end of trouble at carding due to loading. Trouble may also be experienced at drawing due to lap-ups. Too much water-type tint may cause neps, excessive breakage of the fibers, and loading at the card. In the case of oil tints, although the actual processing may appear satisfactory, uneven yarn has been traced to an excessive amount of tint. It is, therefore, apparent that the tinting procedure must be handled in a careful manner.

BLENDING STAPLES. When viscose rayon staple fiber is to be blended with other fibers, such as acetate staple fiber, wool, cotton, and the hair fibers, the major questions seem to be: (1) What are the best methods of blending; and (2) Where should the blending take place? Due to the differences in the above-mentioned fibers, it is apparent that no one method nor place will satisfactorily handle all the various types of blends. Therefore, methods of blending certain specific combinations will be described.

Both viscose staple fiber and acetate staple fiber are supplied in a well-opened state, of uniform staple length, free from foreign material, and generally have physical characteristics that should enable them to be well blended. Due to the fact that both types should be handled very mildly during opening and picking, similar machine settings and speeds are satisfactory for both fibers. Since the two fibers have different dyeing properties and since fabrics from them are often cross-dyed, it is essential that a uniform blend be made if consistently good-quality fabrics are to be expected. Therefore, the logical place for the blending of these two fibers is before the picking operation, since the earlier the blending is done, the more nearly perfect the blend will be.

Several methods of blending are being used satisfactorily. One method is to weigh proper amounts of each stock in 50- or 100-lb. batches, then feed them through a hopper feeder, or a series of hopper feeders, to a slowly turning carding-type beater set wide. From here, the stock passes through a fan and is blown into a storage bin through a pipe line which deposits the fiber in various sections of the bin. Then the stock is fed directly into a hopper feeder attached to the picker. In addition to the breaker or single-process picker, a finisher picker should be used on blends of this type; but in order to prevent over-picking, speeds must be slow and settings correct.

Another method is to weigh proper percentages of each fiber and pass the stock through several hopper feeders that feed directly to a lattice apron. The stock is carried by the lattice apron to another hopper feeder which further blends. Then the stock is conveyed to the picker. Here again, it is well to double the laps on a finisher picker, if possible.

The sandwich method of preparing a blend has long been satisfactory and is still used considerably today. This method consists of laying down alternate layers of the fibers to be blended and feeding cross-sections of the entire batch into the hopper feeder prior to picking. A good method of making this sandwich blend is to run the fibers that are to be blended through the finisher picker in 100% form, then to unroll the laps of the fibers in alternate sections, and to feed from this cross-section to the picker.

Fig. 2. Four hoppers deposit staple from numerous bales to traveling apron. Beaters should be set wide.

VISCOSE AND WOOL BLENDS. It is customary for cotton mills to use cut worsted top as the form of the wool for use in their rayon-wool blends. This has been because smooth yarns could not be made by conventional methods using regular scoured wools of the proper length.

Since this type of blend is also one that should be as nearly perfect as possible, it should take place before picking. When cut-top is blended with rayon staple, best results will be obtained if the cut-top is given a pre-opening treatment prior to blending. It is satisfactory to use a finisher picker for this purpose. Blends up to 50% cut-top and rayon staple can be satisfactorily processed on conventional cotton machinery. After the stock has been pre-opened, any of the methods described above on viscose-acetate blends should work satisfactorily.

It has been found that the presence of too much oil in wool is detrimental to good processing and, therefore, the so-called dry worsted top should be used.

Selected pulled wool and short-type scoured wools can be blended with rayon staple in small percentages and fair results will be obtained. However, it is difficult to make smooth yarns when the percentage of pulled wool is over 20%, unless other processes, such as combing, are added. When scoured wools are used, they must be pre-opened, and if the equipment is available, they should be pre-carded on a woolen or waste-type card before blending.

Short scoured wool and rayon staple can be spun into an excellent yarn by combing the blend on a conventional cotton comber. With this method, blends up to at least 50% wool can easily be processed into a smooth yarn approximating or surpassing the quality of cut-top wool and rayon staple blends.

VISCOSE AND COTTON BLENDS. Due to the large differences in fiber cleanliness, it is logical that the opening, picking, and carding of cotton and viscose be carried out separately. Otherwise, there is a problem of mixed waste and also a problem of properly

processing each type. Since these fibers dye in a similar manner, drawing-frame blending can be used successfully; however, it is an added benefit to use three processes of drawing.

If the blend is of such a nature that drawing-frame blending cannot be used, a good grade of cotton should be selected and given a thorough opening and cleaning treatment before blending in raw stock form. Otherwise, a trashy, dirty yarn will result. Satisfactory yarn will result if the specified staple length of the cotton is not over ¼-in. shorter than the rayon length.

Picking is definitely a process that should be as mild as possible; the fibers should be given just enough beats per inch to open up any small lumps and to form a well-fleeced and even lap. It is not necessary to beat rayon staple fiber so severely as cotton, and it has been found conclusively that by so doing, the rayon fibers are actually damaged. This damage not only consists of broken fibers, which result in more fly, waste, and weaker yarns, but also is responsible for the creation of numerous neps, a number of which ultimately find their way into the finished yarn. Beater speeds of about 600 r.p.m., producing about 35 beats per inch per beater are quite satisfactory for most deniers and lengths, and create a well-formed lap in which the fibers have been damaged very little.

For best results, the Kirschner or carding type of beater is the most satisfactory. Blade beaters are for cleaning purposes, but tend to break fibers much more readily than other types. Although porcupine beaters in the first section apparently do little harm, the pin-type beaters are preferable. Upstroke pin-type beaters, used in a two-section single-process picker, are now being used by some mills, but up to the present time, nothing excels a two-section picker equipped with Kirschner beaters that are operated at the proper speeds. Two-process picking is an added advantage in the handling of blends.

SPLIT-LAP PRECAUTIONS. Some mills experience considerable trouble with split laps when processing rayon staple. First of all, the most effective remedy for this is to use rayon staple that has been properly conditioned before processing, and to maintain proper atmospheric conditions in the opening and picking departments as well as in the card room. Dampers in the pickers should be so adjusted that the majority of the stock is drawn toward the top cage. Fan speeds must be high enough to create sufficiently strong air currents. Fan speeds of around 1400 r.p.m. are usually satisfactory. It is well to have marking devices on the front of the picker to indent slightly the lap sheet. These devices have been quite beneficial in the prevention of split laps.

When changing a picker from cotton to rayon staple fiber, it is generally necessary to reduce by about 20% the amount fed by the hopper feeder in order to maintain lap weights equal to the cotton weights.

The accompanying table gives recommended settings from feed roll to beater for various staple lengths. Whereas it is not asserted that these settings are the best under all conditions they have been found satisfactory.

There has been considerable controversy over the idea of removing the grid bars under the beater and substituting solid sheet metal to prevent fiber loss. If such a change is made, it is suggested that a horizontal slot be cut in the metal sheet to prevent disturbance of the air currents which are essential to the proper formation of a good lap. It is felt, however, that generally better results will be obtained by simply adjusting the grid bars so that they are nearly concentric with the circle of the beater. In this way, very little good fiber is lost and better control of the air currents is maintained.

CALENDER PRESSURE. Calender-roll pressure should in most cases be reduced. This is especially true on fine deniers—1, 1.25, and 1.5. Failure to do this sometimes results in a crushing into powder any small lumps that may come through the picker unopened. It is well to watch lap-roll pressure; also, to prevent excessively hard laps from being formed. Tapered lap pins can be used to facilitate their removal. Better still, cardboard tubes can be used over the lap pins, which completely eliminate any difficulty of this nature. Laps of rayon staple can be damaged much more easily than cotton laps, and should be handled very carefully. It is best practice to wrap them with heavy paper as they are doffed from the picker and to keep them wrapped until they are ready to be placed in a feeding position on the card. This also is useful in keeping the staple clean, which is necessary.

Less picking action is required for coarser deniers, such as 3 and 5.5, than for finer deniers. Naturally, the shorter the staple, the easier the fibers will open. Accordingly, care must be taken not to over-work the coarse deniers, or split laps and excessive fly will result. Fine deniers require more care in opening; however, here too over-working should be avoided because of the ease of fiber breakage and nep formation. This is especially true on types such as 1 den. 1 5/16 in., 1 den. 1 7/8 in., 1.25 den. 1 7/8 in., and 1.5 den. 2 in. Using 1.25-den. 1 7/8-in. staple as an example, nep counts were conducted on stock that had passed through a Kirschner beater 1, 2, 3, and 4 times, and it was found that the number of neps was increased by at least 50% for every passage through the beater.

Subsequent articles in this series will cover carding, drawing, and spinning of rayon staple fiber and blends.—EDITOR.

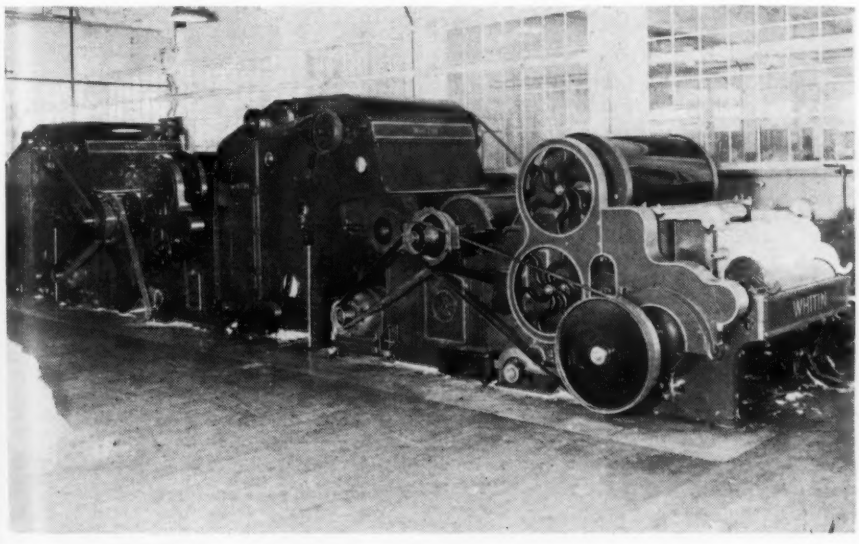


Fig. 3. Two-beater, single-process picker designed especially for spun rayon blends as mentioned in the text. First beater on this machine is pin type; second, Kirschner.

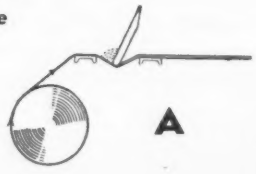
Machines and Methods

HIGHLIGHTS: Synthetic Resins and Rubbers Bring New Problems to Fabric Coaters—Six Major Types of Equipment Are Now Employed—Applications and Limitations of Knife-Spreader, Knife-Blanket, and Knife-Roll Machines.

By JOHN B. CLEAVELAND

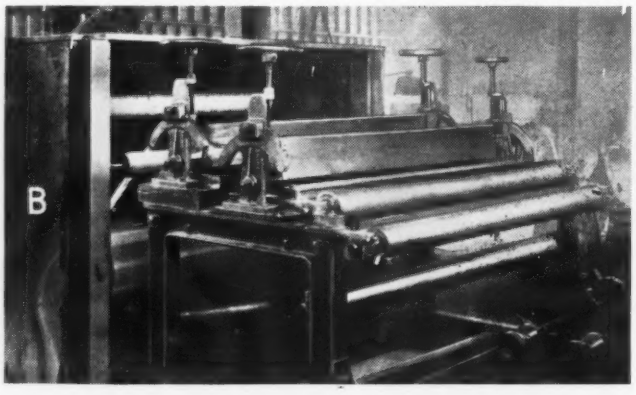
1

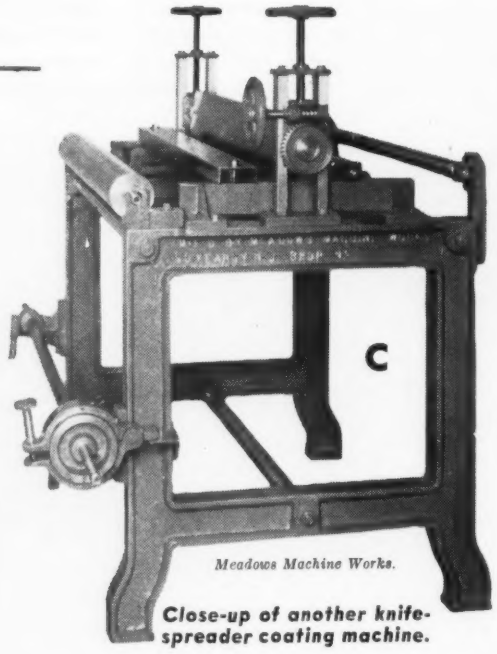
Diagrammatic sketch of knife spreading machine.



Knife-spreader coating machine and drying box.

John Waldron Corp.





Meadows Machine Works.

Close-up of another knife-spreader coating machine.

THE UNEXPECTED SUDDEN AND BRILLIANT ENTRANCE of the newer plastics and synthetic rubbers into the field of coated textiles has presented fresh problems. Still other problems will arise with the postwar applications of plastics. If the basic merits and limitations of the available coating machines are kept constantly in mind, ideas for their proper use in solving these problems will not be lacking.

Few industries are so bound and hampered by so-called trade secrets as is the coating industry. This is probably because the early coating machines were conceived piece by piece from headache upon headache, welded together by the sweat and tears of many failures, and then guarded with pride and jealousy. Today there is little need for this secrecy. The theory and design of coating machines are thoroughly understood by the machine manufacturers. Now is the time for the spotlight of mutual cooperation.

There are six general classifications of coating machines into which all those of the past and present may be sub-divided: (1) the knife coating machine, (2) the roller coater, (3) the extrusion machine, (4) the brush coater, (5) the dip or saturating coater, and (6) the spray gun.

Publication in the May, 1943, issue of TEXTILE WORLD of Mr. Cleaveland's article "Plastic Coatings in the Postwar Era," resulted in many requests for reprints and for further information on this subject of growing interest to textile manufacturers. To meet this demand, Mr. Cleaveland has prepared a short series of articles, of which this is the first, discussing the design and use of the principal types of equipment now available for applying coated finishes to textile fabrics.

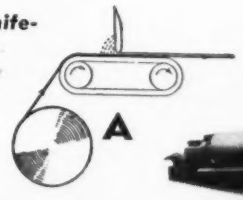
KNIFE COATING MACHINES. In the very earliest of times it was customary for the craftsman to waterproof and beautify his bark canoes and his tents by spreading a mixture of natural extruded resins and balsams over the surface with a flat stick or shell. If your imagination can stand a slight stretch, this was the inauspicious start of the coating industry.

The stick became a bar of steel; the resin became a plastic; and, after a brief interlude of some few centuries when the brush was used, knife coating came into its own with its adoption by the artificial-leather field for the application of pyroxylin solutions. In fact, knife coating is still used for the greatest volume of fabric coating

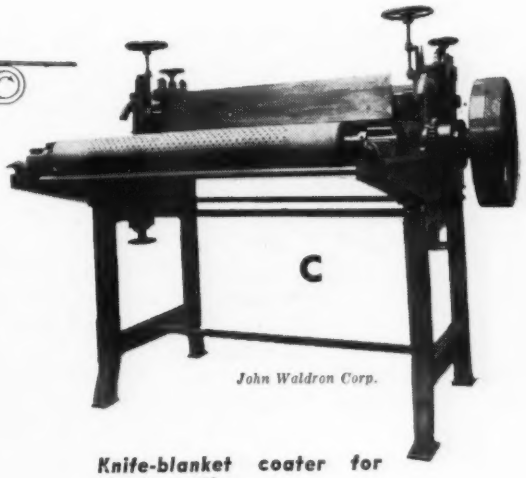
There are three types of knife coating machines in use today. The first type is the knife spreader, where the fabric being coated is held in close con-

...or PLASTIC COATINGS

2



Diagrammatic sketch of knife-blanket machine.

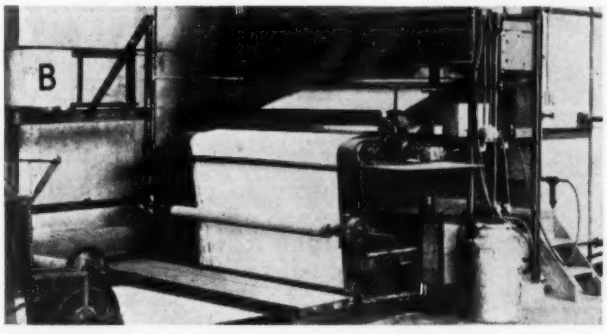


John Waldron Corp.

Knife-blanket coater for sheet coating.

Knife-blanket coating machine for web.

Meadows Machine Works.



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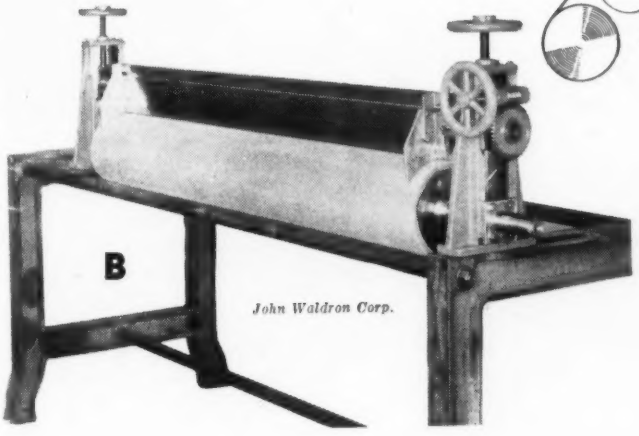
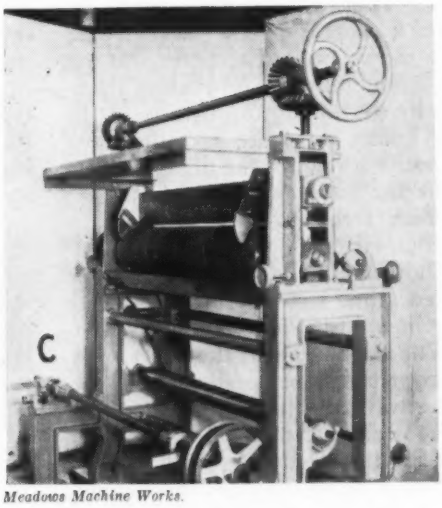
Diagrammatic sketch of knife-roll machine.

One make of knife-roll coating machine.



John Waldron Corp.

Knife-roll coater with rubber-covered roll.



Meadows Machine Works.

tact with the coating knife by passing over a bar or roll on each side of, but not directly under, the knife, as shown diagrammatically in Fig. 1a. The second type is the knife-blanket machine, where the fabric passes between the knife and a thick rubber blanket, usually power-driven, as shown in Fig. 2a. The third type is the knife-roll machine where the fabric passes between the knife and a roll, either metal or rubber, illustrated in Fig. 3a.

KNIFE SPREADING MACHINES. The pioneer and still most popular coating machine is the knife spreader exemplified by illustrations of commercial types, Fig. 1b and 1c. No doubt one factor in their ready acceptance is their comparatively low initial cost, but this is by no means the only reason.

They apply a viscous, high-solid-content coating solution that results in a low solvent cost for a given material. The film produced is smooth, but light, with a tendency to fill the low spots of the fabric, such as the interstices, and leave the top threads lightly coated. If sufficient passes through the machine are provided, the finish will develop a patent-leathery appearance. Each coat will have the effect of equalizing the inconsistencies of those previously applied, forming an even and uniform surface.

This method of application is especially valuable in the case of thixotropic, or gel-forming, plastics, such as the vinyls, and many of the synthetic rubbers. The jelly-like solutions are difficult to handle, and use of other types of equipment that are less easily handled results in a definite lack of coating uniformity.

The machines illustrated depend

upon a multiplicity of coats to develop a satisfactory film thickness. It is rare indeed if less than three passes are required, and not unusual to use as many as fifteen or more passes for a heavy coating.

To counteract this obviously high running cost, the small amount of solvent to be evaporated from the light film deposited during each pass enables the machine to be run at a high speed and still allow the removal of the solvent in a dryer of moderate size.

The coating solution is easily fed to the fabric just before it passes under the knife Only a small amount of excess solution remains after coating is complete—a factor of importance in sample and short commercial runs. The fire hazard is also somewhat reduced by holding the amount of exposed flammable solution to the lowest practical point.

The best way of varying the film thickness per pass is to change the type of coating knife or its cross-sectional thickness. A blade with a round or blunt edge applies more material than one with a sharp, square edge. It is possible to alter the coating weight slightly by adjusting the knife to a more vertical position in the machine for a heavier coat; the usual tilt of the knife is approximately 30° forward from the vertical. The brake also has a definite effect on the coating thickness by controlling the tension of the cloth under the knife and, therefore, the ease with which the dope is pulled under the knife, but the speed of the machine seems to have little if any practical effect.

The flexibilty and soft hand of the coated fabric is the result of the free movement of its individual fibers. This type of machine, with the heavy, non-impregnating dope usually used, is pre-eminently suited to produce a soft, highly flexible coated fabric.

A low-thread-count cloth with large interstices is generally not satisfactorily handled on this coater, nor is one with a very low tensile strength. Proper coating depends upon a rather high tension of the cloth against the knife, and a low-strength fabric readily breaks.

Since there must be sufficient "tooth" in the material to draw the coating solution under the knife, paper, particularly with a glazed or super-calendered surface, is not easily coated on this type of machine. Similarly, as a surface becomes smoother from multiple coating, less and less material is applied. In fact, a low viscosity dope will apply almost nothing to such a surface.

In spite of its simplicity and ease of operation, the machine is not foolproof. The position of the coating knife and the brake must be constantly adjusted to meet variations in the cloth. Indeed, it requires much closer watching than many other types of machines, but if the required attention is given it, the machine is versatile and easily handled.

It has few moving parts, and little time or money is required for upkeep. Occasionally the coating knife must be recut; however, if extra knives are kept on hand, the loss of time is nil and the cost is negligible. Although this is the oldest design in use for coating of textiles, there are still no others that have any likelihood of supplanting its general popularity in the visible future.

KNIFE-BLANKET MACHINES. A web coater of the knife-blanket type is shown in Fig. 2b, and a sheet coater of the same type in Fig. 2c. As with all knife coaters, the machines are simple and ruggedly constructed. The blanket is made of rubber or synthetic rubber, and is somewhat subject to attack by the strong solvents necessary to dissolve the plastic. However, if advantage is taken of the newer solvent-resisting forms of synthetic rubber, this may be of little concern. Damage is more often caused by accidental nicking or cutting of the necessarily sensitive surface. This occasional need for replacement of the blanket brings the maintenance costs of this machine higher than those of the knife spreader.

A heavy, high-solid-content dope is used, as with other types of knife machines. The fabric is held against the knife with the greater rigidity of the blanket, making it safer to apply a heavier coat than with the knife spreader. Thus, the number of coats necessary to reach a given thickness is less, as is the ultimate cost of the coated fabric.

The machine is quite easy to feed and clean; and, with care, will coat evenly and uniformly. The viscosity of the coating solution used is critical, however, and must be watched and closely controlled.

If the knife is kept in contact with the fabric and the solution scraped on, the nature of the coat will be similar to that applied by the knife spreader. However, if the knife is set a few thousandths of an inch above the surface of the fabric, as is usual with this type, the coating will follow the yarn pattern of the cloth more like a roller-applied coating. The film over the top of the yarns will be the same thickness approximately as the film in the interstices. The surface of such a coated fabric must be highly calendered to be made satisfactorily smooth if a patent-leather finish is desired.

The greatest value of this machine is realized when a very heavy coat is applied with the fewest possible passes under the knife. Care must be taken that the surface is not dried so rapidly that solvents are trapped in the fabric, later to force their way through the film, causing bubbles and pock marks.

The knife is easily adjusted up or down to vary the coating thickness, but its height must be governed to some degree by the viscosity of the coating solution. It is a strange phenomenon that a knife set at 0.01 in. over the fabric will not apply a wet film of 0.01 in., but rather something closer to 0.006 in., depending on the thickness of the knife blade and the viscosity of the dope. The sharper the knife edge and the thicker the coating solution, the nearer to the theoretical thickness will be obtained. Since it is desirable to have the knife as far from the surface of the cloth as possible to minimize scratches and tears, most knives are made with a broad, rounded edge This effect is noticed in any machine metering a solution between two surfaces.

The knife-blanket machine coats as well over paper and other smooth surfaces as over rougher fabrics. In order to avoid excessive strike-through of a solution to the blanket with subsequent rapid chemical breakdown of the blanket, it is advisable to fill all open-meshed fabrics on another type of machine.

The film is laid on the cloth with such a small amount of tension that a greater flexibility will be obtained for a given formula than on most other machines, although the difference may be so slight as to be negligible.

KNIFE-ROLLER MACHINES. Examples of knife-roller machines in which a roller, either rubber covered or metal, is substituted for the blanket used in the previously described type, are shown in Figs. 3b and 3c.

The knife-roller machine produces a character of coating similar to that of the knife-blanket machine. Its price is low and its operation sufficiently simple to make it a useful machine for many coating requirements. It must be made with more precision than other knife machines, but it will coat more accurately. There is a considerable danger from tears and streaks because of the lack of "give" in the rigid roll. It is a valuable but not particularly versatile machine.

Subsequent articles in this series will deal with roller coaters, extrusion machines, brush coaters, dip coaters, and spray guns.—Editor.

The NAPPER ROOM Today

HIGHLIGHTS: Women Operatives Found Suitable —Second Hand Responsible for Settings—Hints on Reclothing Rolls.

DEMAND FOR COTTON-FLANNEL and other napped fabrics for military and civilian fabrics has increased in recent years. Lend-Lease is taking some napped goods and is expected to call for more. Use of napped fabrics for certain industrial purposes has grown. Consequently, the napper room has had to operate for longer hours than formerly. Trained help has been drawn from the napper room as heavily as from other departments of the mill, and additional problems of training new help have resulted. All this means that the napper-room overseer must pay a great deal of attention to details of cleaning, oiling, maintenance, and operation to be certain that the new workers process the goods correctly and keep the machines in good condition.

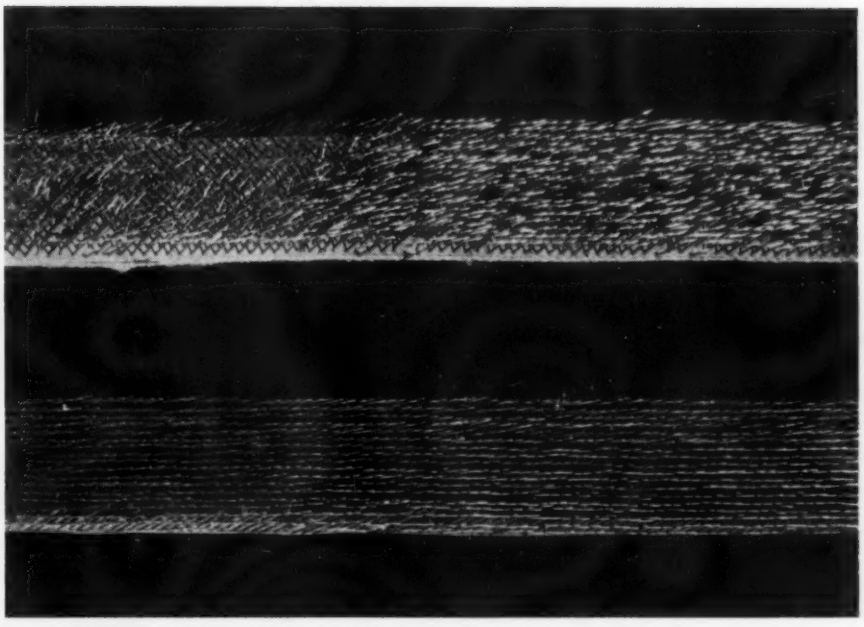


Fig. 2. Comparison of the old napper clothing at the top with the new clothing at bottom shows why rolls must be reclothed to get good work.

WOMEN NAPPER HANDS. One overseer put women to tending his nappers a little over a year ago with some misgivings as to their suitability for the work. (The finish of napped goods is determined largely by appearance and feel, and a tender needs considerable experience in order to handle the goods properly and to obtain the proper finish.) This overseer was highly pleased to find that women could be placed on their own stand of nappers after a four-weeks' training period and that they learned the job more quickly than men. At the present time most of his tenders are women, and production goes through smoothly.

Tenders do not make adjustments on nappers. This is done by the second hand, who, by long experience, knows just what setting to make to get the right pile on a run. He also decides whether a re-run is necessary and when a machine must be stopped for reclothing. Unfortunately, no two nappers raise the same amount of nap, and the second hand must be conversant with the action of each machine in order to determine the course of the goods.

Rolls are not even from end to end, and this may cause variation in the nap on either or both selvages or in the center of the goods. By knowing the roll condition of each napper, he can so route the fabrics that under-napped portions are given more nap on a latter machine. In addition, the second hand regulates cloth tensions and cylinder roll speeds to do just the right

(Continued on page 82)

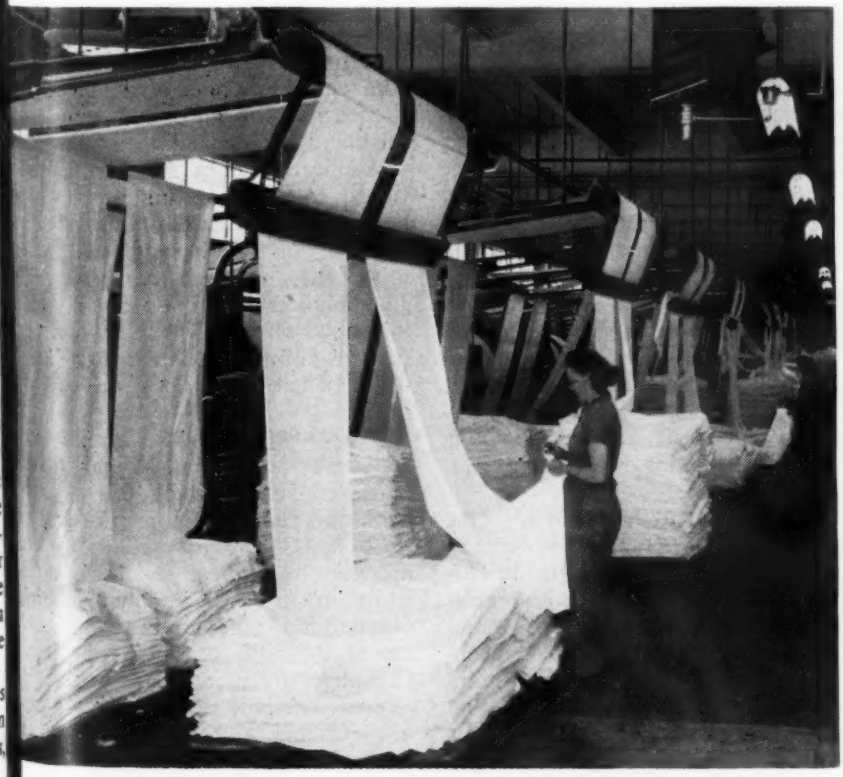
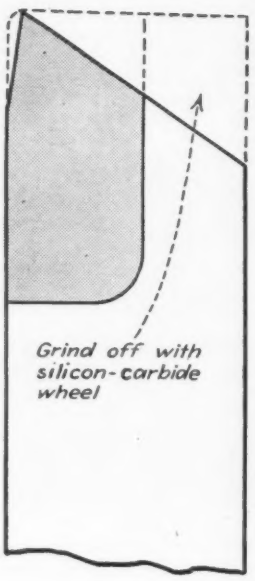


Fig. 1 In this napper room women have replaced men as machine tenders.

Cemented-Carbide Tools Aid in METALLIZING

HIGHLIGHTS: Speeding-Up Preparation of Parts to Be Sprayed — Putting on the Final Finish—Hints on Tool Care and Use.



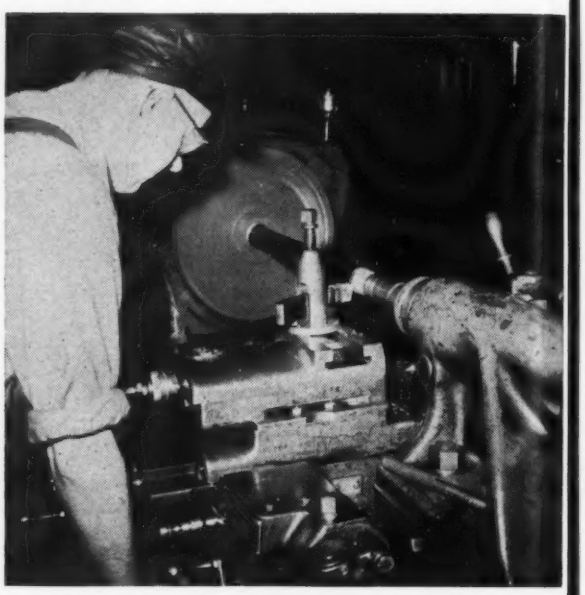


Fig. 1. (Left) Carbide-tipped tool for machining surfaces to be metallized. Fig. 2. (Right) Finishing metallized part with standard carbide-tipped tool.

METHODS FOR RECLAIMING worn parts and building up protective surfaces by metal spraying were described in some detail in an article on "Metallizing" in the November, 1943, issue of TEXTILE WORLD. The three steps in the metallizing process are: (1) preparation of parts for metallizing, (2) spraying the prepared surface with molten metal, and (3) finishing the sprayed metal coating. Following the publication of that article, we were advised that use of cemented-carbide-tipped tools will speed up both the preparatory and the finishing operations, as such tools have cutting speeds two to three times those given in the table on page 121 of the November issue. It is believed, therefore, that mill engineers, master mechanics, and maintenance men will want to familiarize themselves with the design, operation, and care of cemented-carbide-tipped tools for use in conjunction with the metallizing process. The data given below were compiled from engineering bulletins and other booklets published by the Carboloy Co., Inc.

TOOL DESIGN. Briefly, cemented carbides are prepared by combining tungsten and carbon at high temperatures to form tungsten carbide, mixing with cobalt, or another cementing material, molding, pre-sintering, forming into desired shapes, and sintering. Four grades of cemented carbides are satisfactory for practically all carbide machining operations.

Standard practice is to use the carbides in the form of tips with a steel shank. Proper tip thickness and shank sizes can be determined from tool manufacturers' manual.

The practice with regard to tool design varies. There has been a trend in the last few years, however, toward the increased use of standardized tools which are designed and made by the tool manufacturer and carried in stock by him. When a special tool is required, a user will purchase a standard tool and merely grind the end of it to the special shape required, or he may ask the carbide tool manufacturer to design special tools for a specific application. General practice at the tool manufacturer's plant is to use copper for brazing the tips to the shanks. This process lends itself well to large-scale production of tools. Where the user brazes tips on his own tools, conventional torch equipment is usually employed.

There are three ways in which carbide tools are furnished: (1) in complete finished form; (2) milled and brazed only, leaving the finish grinding to the user; and (3) carbide tips furnished only—user supplies his own shanks and does his own brazing.

PREPARING AND FINISHING. One "special" tool for preparing surfaces to be metallized is shown in Fig. 1. This consists of a standard tool, with regular carbide tip for machining steel, ground to the shape shown with a silicon-carbide wheel. The dotted lines indicate the original shape of the tool before grinding. This unorthodox method of grinding results in a tool which gives the rough surface needed to permit good adhesion of the sprayed metal.

Other types of cemented-carbide-tipped tools are employed for obtaining the fine finish desired on the part after it has been metallized. It is advantageous to carry out the finishing operation at high speeds with fine cuts. The type of tool to be used depends on the particular metal or alloy employed for the metal spraying operation.

Application of a standard carbide tipped tool in finishing parts which have been metallized is illustrated in Fig. 2. This part—an air and water pump rod—has been metallized with 18-8 stainless steel. The part is being machined on a 20-in. lathe. Cutting speed is 242 ft. per min. with a 1/64-in. depth of cut, and 0.005 in. feed.

USING CARBIDE TOOLS. Carbide tools are as easy to use as ordinary tools. However, because they are extremely hard, and therefore more brittle than steel tools, certain precautions are necessary to protect the carbide tip while in use. It is advisable that supervision of design, grinding, and use of the tools be under one man. Complete instructions for grinding cemented carbide tips, for brazing tips to the shanks, and for use and care of the tools are given in the manuals put out by manufacturers of tips and tools.

Hosiery Mill Speeds Up FINISHING OPERATIONS

HIGHLIGHTS: Inspectors and Folders Relieved of Incidental Duties—Hose Packed According to Shipping Schedule—Work Simplified—Overtime Reduced.

By DON BRADFIELD

CONGESTIONS, necessitating overtime to clear, were frequently developing in the inspecting and packaging department of a southern hosiery plant. The personnel in the department involved consisted of twelve inspectors, who also handled the pairing, one boy whose duty was to issue work from the boarding department to the inspectors and to supply stock boxes to the inspectors, four girls to do transfer-labeling, twelve folders, one girl to fill orders, one girl to handle returns and employee sales, one boy to print boxes, four menders, and a stock clerk.

The inspectors were responsible for placing inspected hose in bins, according to the shade and quality. They often mixed the hose in the bins, resulting in much reinspection and unnecessary overtime. It was found that the boy who issued work to the inspectors could carry inspected hose to the bins on his return trip, and that this one person could keep the bins straighter than the twelve inspectors did. This saved work for the inspectors in two ways, and enabled them to keep up as well as to increase their earnings.

The folders, who also put bands on the hose and boxed them, would fold all morning until their tables were stacked high with work. Then they would pack the hosiery in boxes, which resulted in very little work going to the stock clerk in the mornings, but a great deal late in the day. Consequently, in order to fill the day's orders, the stock clerk habitually worked after the scheduled stopping time. To correct this, the folders started folding their work directly into the boxes.

Next, it was found that hose were not being packed according to the shipping orders on hand. This was due largely to the practice of having the folders get their own work from the transfer-label section. Another condition noticed was that much time was consumed by each individual folder getting her own packing materials, a few at a time, whereas all folders could be supplied from a handtruck.

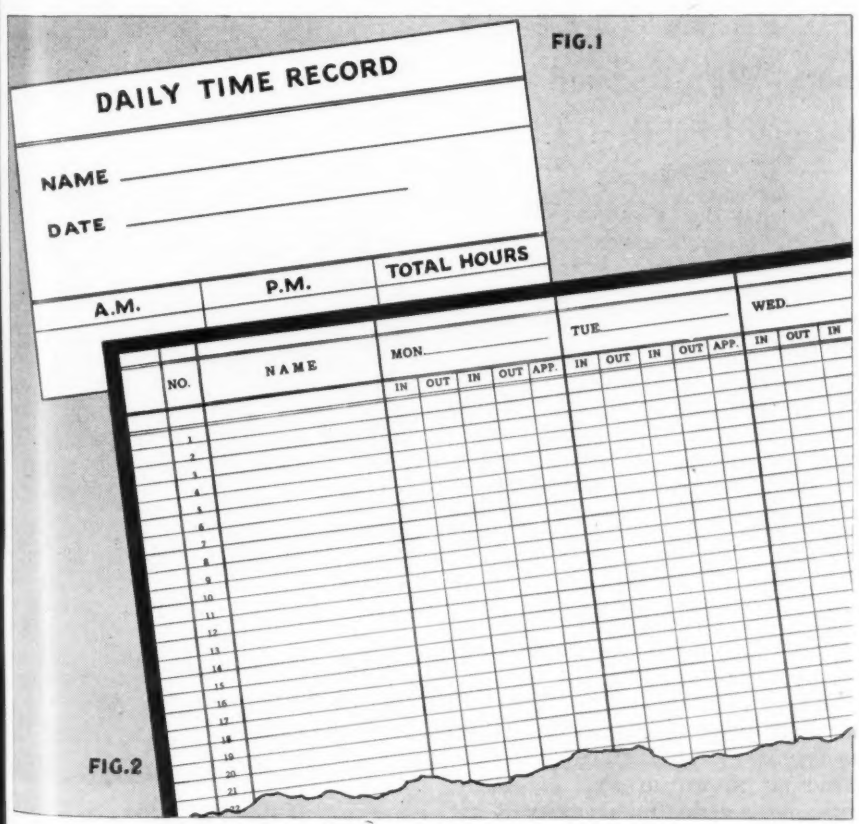


Fig. 1. Daily time ticket for individual workers. Fig. 2. Timekeeping form for checking hours against daily time tickets.

WORK REARRANGED. As a start to correct all this, one folder was given the job of issuing work and of supplying the proper packing materials, such as bands, riders, inserts, etc. This girl also kept a record of the work done by each folder. The change proved so successful that it was found that another folder could be relieved to assist the first, especially to see that the work issued conformed to the orders to be delivered to the shipping room. These improvements not only eliminated any need for the stock clerk to work late, but also enabled shipments to be made against order-schedules better than ever before.

It is necessary to keep an accurate record of the hours worked, regardless of whether operatives are paid piece rates or by the hour. For this, the form shown in Fig. 1 is used. This form is filled out daily by the operators and eventually reaches the payroll department. The new work arrangements enables the stock clerk to act also as a timekeeper, to check these tickets. For this, a sheet 19x16 in. was printed, as illustrated in Fig. 2. As operators go in and out, the times are entered, and then they are checked against the daily time tickets. The column on Fig. 2 headed "App." is initialed by the stock clerk to vouch for its correctness.

Fig. 1. Two cotton draperies—one dobby; other jacquard. (Louisville Textiles, Inc.)

PART V

Trends in DRAPERY FABRICS

By THOMAS O. OTT, Jr.
Southern Editor, TEXTILE WORLD

Previous articles in this series, which began in the September 1943, issue discussed the functions of the stylist and designer, manufacture of fabric samples, and costing new fabrics. Subsequent articles will deal with designing of specific types of fabrics.

HIGHLIGHTS: New Fibers and Finishes Will Broaden Design Possibilities — Consumers Will Demand Fast Colors and Also Dobby and Jacquard Fabrics.

STYLED DRAPERY FABRICS have been restricted during the war to those patterns and constructions that can be manufactured without interfering with production of essential civilian and military textiles. Conversion of many types of fancy looms to the production of duck, canvas, osnaburg, and other necessary war textiles have left fewer looms that can be devoted to styled consumer textiles. Such materials such as dyes, combed yarns, and filament rayon are available to the consumer-fabric manufacturer only in limited quantities. Some mills have discontinued or sharply curtailed the manufacture of drapery fabrics for the duration with the idea of picking it up again when the war is over. However, manufacturers should have their plans ready for an orderly reconversion when war production begins to taper off. They should be prepared to make full use of all the new developments in synthetic fibers and yarns and new dyes and finishes. Companies that wish to equip their plants with the best and latest drapery looms should lose no time before getting in touch with the machinery manufacturers.

THE MARKET TODAY. Examination of the present market indicates that fabrics have been styled to take full advantage of the fibers, yarns, colors, and finishes now available. Designs and colors have been carefully selected because manufacturers feel that quality and style are more important than variety.

Two all-cotton fabrics are shown in Fig. 1. One is a dobby chevron weave, and the other a jacquard fabric with colored design.

A highly styled all-cotton fabric, produced in a range of designs colors, that can be used for both drapery and bedspreads is shown in Fig. 2. Such fabrics are suitable for many types of rooms other than bedrooms. Incidentally, the idea of using drapery fabrics for companion accessories to

Fig. 2. Highly styled all-cotton drapery fabric that can also be used for making companion bedspreads. (Bates Mfg. Co.)

the draperies has been in vogue since before the war, and holds possibilities for larger use of drapery materials.

Spun rayon yarn is being used both as top-beam decorations and for ground warps where additional smartness is desirable. These fabrics, one of which is shown in Fig. 3, can be used both for formal and informal decorations.

Continuous filament rayon yarn also is used extensively in drapery fabrics. The fabric shown in Fig. 4 is a cross-dyed Jacquard drapery with acetate rayon warp in blue and the cotton filling in a light shade.

Although printed draperies have been restricted as to the amount of color, attractive prints are still possible. The fabric shown in Fig. 5 is woven in with a rayon warp and cotton filling; colors are lighter than before the war, and more white background is included to conserve dyes.

Yarns are the conventional colored and natural, single, plied, and novelty types seen before the war. Numbers range from heavy, soft-twist rovings to yarns of medium count for warp and filling. In many instances, plied warp yarns are made with a low twist to give softness and drape to the fabric. Fillings are generally spun with low twist and plied so as to give softness and bulk to the cloth.

Staple-fiber blends of cotton, wool, linen, Aralac, viscose, acetate, etc., are likely to be seen in great variety. Many unusual and beautiful effects can be made by dyeing in the raw stock and by mixing dyed and undyed staples or by cross-dyeing blended yarns.

In the present period, colors are primarily the same as before our entry into the war. Such standard shades as eggshell, beige, rose, blue, green, gold, red, and wine are still being used.

DYES AND COLOR FASTNESS. For draperies, fastness to washing is of secondary importance to fastness to light. Many draperies are dry-cleaned and, for this reason, many fast-to-light direct colors are suitable. Before the war the general trend was toward use of vat and naphthol colors for draperies. This enabled the manufacturers to state that their goods were tub-fast and light-fast. However, there was also a wide range of draperies made with selected fast-to-light directs. These goods possessed good fastness to light and dry-cleaning but only fair fastness to washing. Wartime restrictions now require the use of Class B vat colors and naphthols, and restrictions have reduced the available fast-to-light direct colors. As a result, selected direct colors that are after-treated are being used to fill in the gaps. For printed draperies, dyes used include basic colors, fast-to-light directs, and vats. Basic colors have fair wash fastness, but rather poor light fastness.

DESIGNING AND WEAVING. Dobby and jacquard looms, both single and multiple box, are used for drapery fabrics. Fabrics for printing can be woven on cam looms. Many of the novelty fabric effects are secured by novelty yarns, such as seeds, ratines, spirals, etc., dyed so as to contrast with the plain, single, or plied yarns, or woven so as to stand out. Novelty yarns, as a rule, are displayed in fabric to get the fullest effect.

Designers are limited only by the harness capacity and boxes available on the looms. Many dobby patterns are made on a few harnesses, and more use is made of the boxes. In other dobby patterns, full use is made of the harness and only one box.

Dobby patterns are worked out in pencil or ink on standard 8x8 design paper, and the chains are pegged and tried on a sample loom, usually during the sampling period of getting up a new line. Drafts for patterns selected for the line are filed with the fabric specifications and swatch, and the actual dobby chain is tagged and put aside for future use.

Jacquard draperies can be woven on various types of cotton or rayon looms over which a jacquard head can be mounted. Some mills use single-shuttle looms for jacquard draperies, whereas others prefer a jacquard box loom in order to use a variety of filling combinations in the same fabric. Often drapery and upholstery can be made on the same loom by judiciously selecting a tie-up that is suitable for both types of fabrics. Also, even when looms are tied up for higher sley goods, the lower sley draperies can be woven by casting out the sections of the harness and leaving the cards uncut for that section. For a drapery plant on all-jacquard work, the fewer ties used the easier it is to handle the designing, card cutting, and dressing of warps.

Patterns for both dobby and jacquard heads should be saved for revision or revival at a later date with new colors and yarns, although the period or cycle of re-use of old pat-

Fig. 3. Jacquard fabric with spun-rayon colored warp and natural plain and nubby novelty yarn filling. (Cohn-Hall-Marx Co.)

Fig. 4. Drapery fabric with continuous-filament acetate rayon warp and spiral cotton filling cross-dyed. (J. W. Valentine Co.)

terns may be long. This is especially true of jacquard patterns, for which designs and cards are expensive. Dobby pattern chains are not kept for long periods, because the chains and pegs can be used constantly and are difficult to keep. For these, a chain draft, draw-in draft, and swatch filed away should be sufficient.

On jacquard patterns, much more care is required in determining construction, width and length of repeat, and weaves, as once the cards are cut they cannot readily be changed without great expense. For this reason, sketches of proposed fabrics are laid out on point paper and the weaves indicated and blocked out to be sure the weaves and design elements fit into the complete pattern properly. Where designing and card cutting is done in the plant, one way of testing a design is to cut the cards for a section of a proposed pattern and weave a trial just to be sure the new construction, yarns, and weaves are going to work together as expected.

In weaving draperies, the fabric construction, the difficulty of weave, and the type of yarns limit the loom assignment for weaver from two looms up to assignments usually found only on standard drills, sateens, sheetings, and print cloths. In most cases a new fabric can be classed with a similar fabric on which the weavers have had previous experience and looms assigned accordingly.

Fig. 5. Printed drapery fabric with continuous-filament rayon warp and cotton filling. (J. W. Valentine & Co.)

The NAPPER ROOM Today

(Continued from page 77)

amount of raising at each run. He must also set the stripper rolls by gage so as not to crown the clothing wire on the worker rolls. The straight-toothed front and back stripper rolls are recovered only when damaged. Sand rolls and felt-covered guide rolls are covered on the machine when they are found to be badly worn.

MAINTENANCE. Napper rolls must be recovered and ground as often as the pile and counterpile rolls require it. This can only be determined by the second-hand examining the condition of the rolls and pulling out the rolls for recovering if wires are crowned or the rolls are uneven or channeled. (Long passage of fabric under tension over sections of the rolls eventually presses the teeth down to form a channel.)

In one mill the pile and counterpile rollers are removed, reclothed, and reground whenever necessary, these operations being carried out at intervals of two weeks to six months, depending on the speed at which the rolls are worn. Extra rolls are kept on hand and ready to be put into the napper from which the worn rolls are removed so that production losses can be kept low. A full new set of rollers is put in at one time to assure even napping. The old clothing is pulled off and discarded. Then the roll is placed in a roll-covering and grinding machine. New clothing is tacked on at one end and wound on at an angle. Pile and counterpile rolls are covered just the opposite as regards direction of putting on clothing and the angle of wind. The new clothing is ground smooth and even with a traversing emery rock in the roll-covering machine, and the wire pointed with a disk grinder.

OILING AND GREASING. The main cylinder bearing has a cup reservoir that is filled twice a day. Coneshaft bearings are oiled with the same lubricant once every 8 hr. All other bearings and gears are lubricated with grease. Oil and grease must be kept off all belts. Chains drives to rolls are lubricated from the lubricant thrown out from nearby bearings or gears. Motors and main-drive gears and pinions are greased by the electrical maintenance workers.

CLEANING. Nap is not entirely removed by the high-capacity suction pans under the rollers. Consequently, a sweeper is needed to spend full time sweeping up extra nap from the floor. No machine can safely be brushed off or cleaned while running. Thorough brushing and blowing off are done on week-ends when the machines are not in operation. Pile and counterpile rolls are cleaned by the front and back straight-toothed stripper rolls, which are carefully set slightly away from the napper wire.

SLASHING Speeded Up With INFRA-RED LAMPS

HIGHLIGHTS: Homemade Auxiliary Dryer Installed by Southern Mill—Gives 40% Production Increase.

A CHANGE FROM 30s WARP YARN used for a line of civilian goods to 14s specified in a contract for military fabrics made it necessary for Ware Shoals (S.C.) Mfg. Co. to increase slasher production. This was accomplished by the addition to a conventional 7x5 slasher of an auxiliary infra-red dryer, which permitted the slasher speed to be stepped up from 30 to approximately 42 yd. per min.—a 40% increase. The auxiliary dryer was designed and installed by the mill's own maintenance department.

The drying unit consists of a hood of ¼-in. asbestos (Fig. 1), 7 ft. long, 57 in. wide, and 16 in. deep, suspended from metal frame over the warp sheet between the size box and the regular 7-ft. drying cylinder. Flaps of asbestos are hinged to each side of the drying panel to shield the slasher tenders from the infra-red rays which otherwise might result in severe burns. All edges of the hood and flaps are bordered with a reinforcing strip of ¼x2-in. band iron. On the underside of this hood (Fig. 2), 120 sockets are fastened and wired in rows so as to permit use in the drying area of the maximum number of Westinghouse 250-watt, 110-volt infra-red lamps. A hand switch connected to the slasher is provided to shut off the lamps in the event the slasher slows down or is stopped. At present 98 lamps are in use, as the transformer now employed for supplying the current can care only for that number. Power consumed by the lamps is estimated to be equivalent to that necessary for a 5-h.p. motor.

Photos by Coze.

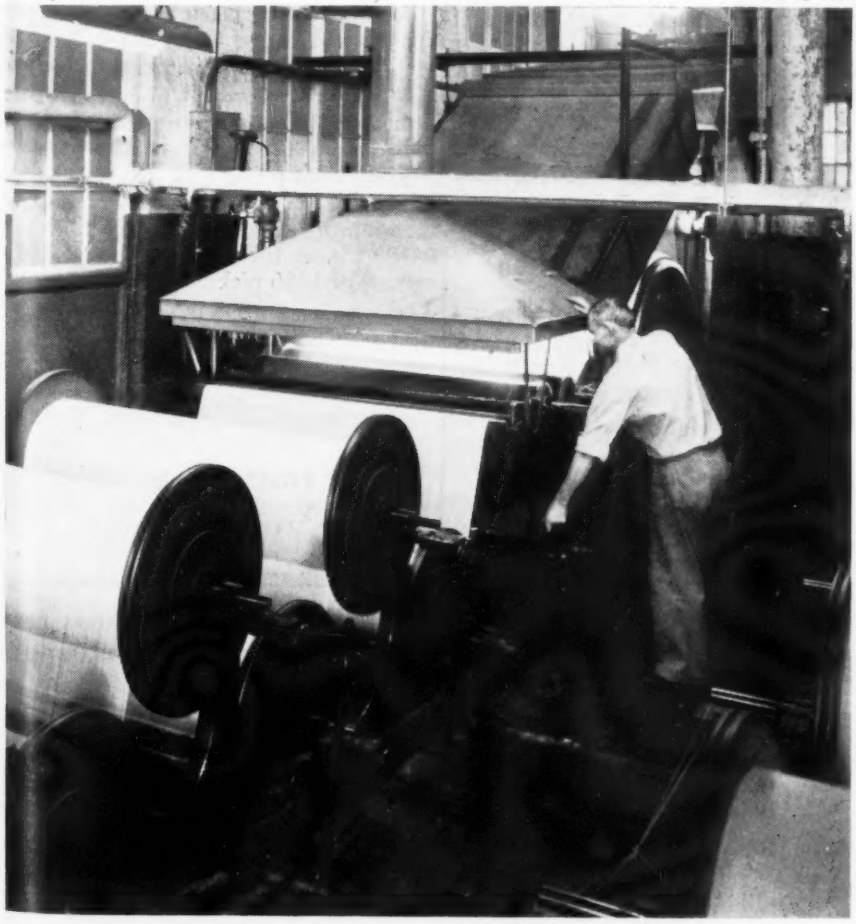


Fig. 1. Asbestos hood suspended over 5-ft. cylinder shields infra-red lamps.

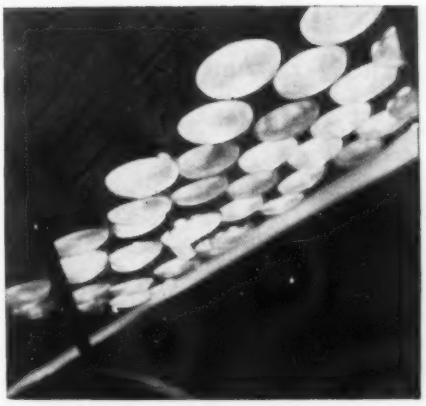


Fig. 2. Underside of asbestos hood shows how lamps are spaced.

Originally, a reflector of sheet iron was placed under the yarn sheet to dry the yarn from the underside as well as the top. However, this proved unsatisfactory, due to the heat melting the soldered joints of the metal. Other types of metal, such as Monel, will be tried when they are again available.

RESULTS OBTAINED. No changes were required in the size formula or volume, or the method of threading up the slasher. The starch does not have any tendency to cake, as it does at times when striking a heated slasher cylinder. This is attributed to the gradual drying of the warp under the lamps to the 7-ft. cylinder and then to the 5-ft. cylinder, each at a different temperature. The temperatures of the 5 and 7-ft. cylinders are maintained at 235 and 240° F. Temperature of the yarn under the infra-red lamps is unknown.

The yarn breaks a little easier at the slasher bust bar. The sized yarn has a good hand and to the eye looks just like the average slashed yarn of the same number. There is a possibility, however, that a microscopic study of the yarn will show that the starch film is less broken than is usual when yarn is slashed by conventional methods. The yarn seems to weave fully as well as that sized on slashers without the auxiliary dryer.

READY RECKONERS Speed Cost Calculations

HIGHLIGHTS: Tables Save Time in Figuring Efficiency, Earnings, Expenses—Reduce Work to Selection and Addition—Tables Easy to Develop.

By ERNEST WHITWORTH

This is the second of a series of articles by Ernest Whitworth on short-cut methods designed to save time in making textile calculations. Mr. Whitworth is the author of the book "Practical Cotton Calculations" which, unfortunately, is now out of print. At one time he taught weaving, designing, and cloth analysis in a textile school, was then designer in a worsted mill, and later entered the cost-accounting and consultation field with a well-known firm of textile engineers. For some years he has been connected with one of the largest fancy goods mills in the country, where he has had experience with production and cost problems, inventories, job analyses, time studies, rate setting, and similar work. Mr. Whitworth has offered in this series to cover any specific calculations requested by our readers. Such requests should be addressed to Technical Editor, TEXTILE WORLD, 330 West 42nd St., New York 18, N. Y.

Table IV. Loom efficiency calculator.

Production, in units of 1000 picks, for a loom running 132 picks per minute

	5 days (40 hrs.)	4 days (32 hrs.)	3 days (24 hrs.)	2 days (16 hrs.)	1 day (8 hrs)	1 hr.
Unit	316.80	253.44	190.08	126.72	63.36	7.92
% Efficiency		at 100% production				
95	300.96	240.77	180.58	120.38	60.19	7.524
94	297.79	238.23	178.68	119.12	59.56	7.445
93	294.62	235.70	176.77	117.85	58.92	7.366
92	291.46	233.16	174.87	165.82	58.29	7.287
91	288.29	230.63	172.97	115.32	57.66	7.207
90	285.12	228.10	171.07	114.05	57.02	7.128
89	281.95	225.56	169.17	112.78	56.39	7.049
88	278.78	223.03	167.27	111.51	55.76	6.970
87	275.62	220.49	165.37	110.25	55.12	6.891
86	272.45	217.96	163.47	108.98	54.49	6.811
85	269.28	215.42	161.56	107.71	53.86	6.732
84	266.11	212.89	159.67	106.44	53.22	6.653
83	262.94	210.36	157.77	105.18	52.59	6.574
82	259.78	207.82	155.87	103.91	51.96	6.495
81	256.61	205.29	153.96	102.64	51.32	6.415
80	253.44	202.75	152.06	101.38	50.69	6.336
79	250.27	200.22	150.16	100.11	50.05	6.257
78	247.10	197.68	148.26	98.84	49.42	6.178
77	243.94	195.15	146.36	97.57	48.79	6.099
76	240.77	192.61	144.46	96.31	48.15	6.019

BASIC READY RECKONERS have been found useful for calculating weaving production and piece-rate earnings. When complete tables can be used, they are preferable, since they can eliminate many, if not all, computations. For most uses special tables are needed, as factors to be considered vary widely. An example of this is Table IV, which is for finding the efficiency of a loom operating at 132 picks per min. It is based on the formula: p.p.m. × min. ÷ 1000 = M-picks per hour at 100% efficiency. Similar tables for different loom speeds and for any number of looms can be prepared.

WEAVER'S EARNINGS. Basic ready reckoners can be developed easily for computing earnings of weavers. An example for a piece-rate of $0.0223 per thousand picks is given in Table V. If weavers are running various styles each with a different piece rate, several ready reckoners will be required. For convenience they can be written or typed on 3 x 5 cards.

The following illustrates the application of this reckoner, based on use of reckoners as described in the first article in this series in the January issue.

Example: What would a weaver earn with a piece-rate of $0.0223 per 1000 picks for a production of 1672 units of 1000 picks?

$$\begin{aligned} 2 &= .04 \\ 70 &= 1.56 \\ 600 &= 13.38 \\ 1000 &= 22.30 \end{aligned}$$

$$1672 = \$37.28 \text{ (Ans.)}$$

FABRIC COSTS. Table VI permits quick determination of the pick-rate cost per yard of fabrics of various pick-

Table V. Ready reckoner for determining workers earnings

Style No. 143

M-Picks	Rate
1	$.0223
2	.0446
3	.0669
4	.0892
5	.1115
6	.1338
7	.1561
8	.1784
9	.2007

ages and at different piece rates, once the rate per 1000 picks has been com-

Example: What is the pick rate cost per yard for a fabric with 88 picks per min. and a piece-rate at 2.23c. per 1000 picks.

Rate	Value
.03c.	.095c.
.20	.633
2.00	6.336
2.23c.	7.064c. per yd. (Ans.)

In practice one would put down only the following:

.095
.633
6.336
7.064

The method used for making Table VI is first to arrive at 0.036c. which is the pick-rate cost at a piece-rate of 1c. per 1000 picks for a theoretical cloth containing 1 pick per in. Multiply this figure by the pick per inch to obtain the column under "1", which is the cost at 1c. per 1000 picks. Then merely multiply the respective figures in this column across the board by the figure heading each column and the table is formed.

CORRECTION: In the January issue on the top of page 65 an example is given in which the figure 1680 should appear as 16800.

Table VI. Table for determining pick-rate cost per yard of fabrics.

Picks per inch	Pick Rates—Cents per 1000 Picks								
	1	2	3	4	5	6	7	8	9
	Costs—Cents per Woven Yard								
110	3.960	7.920	11.880	15.840	19.800	23.760	27.720	31.680	35.640
108	3.888	7.776	11.664	15.552	19.440	23.328	27.216	31.104	34.992
106	3.816	7.632	11.448	15.264	19.080	22.896	26.712	30.528	34.344
104	3.744	7.488	11.232	14.976	18.720	22.464	26.208	29.952	33.696
102	3.672	7.344	11.016	14.688	18.360	22.032	25.704	29.376	33.048
100	3.600	7.200	10.800	14.400	18.000	21.600	25.200	28.800	32.400
98	3.528	7.056	10.584	14.112	17.640	21.168	24.696	28.224	31.752
96	3.456	6.912	10.368	13.824	17.280	20.736	24.192	27.648	31.104
94	3.384	6.768	10.152	13.536	16.920	20.304	23.688	27.072	30.456
92	3.312	6.624	9.936	13.248	16.560	19.872	23.184	26.496	29.808
90	3.240	6.480	9.720	12.960	16.200	19.440	22.680	25.920	29.160
88	3.168	6.336	9.504	12.672	15.840	19.008	22.176	25.344	28.512
86	3.096	6.192	9.288	12.384	15.480	18.576	21.672	24.768	27.864
84	3.024	6.048	9.072	12.096	15.120	18.144	21.168	24.192	27.216
82	2.952	5.904	8.856	11.808	14.760	17.712	20.664	23.616	26.568
80	2.880	5.760	8.640	11.520	14.400	17.280	20.160	23.040	25.920
78	2.808	5.616	8.424	11.232	14.040	16.848	19.656	22.464	25.272
76	2.736	5.472	8.208	10.944	13.680	16.416	19.152	21.888	24.624
74	2.664	5.328	7.992	10.656	13.320	15.984	18.648	21.312	23.976
72	2.592	5.184	7.776	10.368	12.960	15.552	18.144	20.736	23.328
70	2.520	5.040	7.560	10.080	12.600	15.120	17.640	20.160	22.680
68	2.448	4.896	7.344	9.792	12.240	14.688	17.136	19.584	22.032
66	2.376	4.752	7.128	9.504	11.880	14.256	16.632	19.008	21.384
64	2.304	4.608	6.912	9.216	11.520	13.824	16.128	18.432	20.736
62	2.232	4.464	6.696	8.928	11.160	13.392	15.624	17.856	20.088
60	2.160	4.320	6.480	8.640	10.800	12.960	15.120	17.280	19.440
58	2.088	4.176	6.264	8.352	10.440	12.528	14.616	16.704	18.792
56	2.016	4.032	6.048	8.064	10.080	12.096	14.112	16.128	18.144

New Water-Repellent Fabric

HIGHLIGHTS: Unique Construction First Developed at Shirley Institute—Military Authorities Interested.

MILITARY AUTHORITIES are expressing keen interest in a new type of water-repellent cotton fabric developed by Dr. F. T. Peirce, of the British Cotton Industry Research Association, at Shirley Institute.

The outstanding feature of this new fabric is that the water-resistant properties are due largely to the unique construction of the cloth. Reports from England indicate that the Shirley method is being employed in manufacture of fire hose, canvas, and raincoat fabrics. Recently some experiments have been carried out in this country on production of similar types of water-repellent fabrics.

In his experiments, Dr. Peirce worked on the hypothesis that if the cotton fibers in a fabric were in such a condition that they could swell when moistened, they would, in contact with water, block up the interstices in the cloth, thereby making it water-repellent and water-resistent. Fabrics for fire hose were made on that principle by spinning high-grade, long-staple cotton with a very low twist, plying in the opposite direction—again with a low twist, mercerizing, and weaving with a close weave.

The fire hose manufactured in this way met the stringent specifications of the Home Office for resistance to water penetration under pressure. Subsequently Dr. Peirce followed the same principle in developing water-repellent canvas and uniform fabrics. The process employed is covered in British Patent 549,974.

A typical tubular-woven fabric for fire hose is made as follows: A long-staple cotton, such as Giza 12 Egyptian, having a staple length of 1½ in. or more, is spun into 6½s singles yarn using a twist multiple of 2½. This is plied, using a twist multiple of about 3 and twisting in the opposite direction to make a 6½/16 yarn; or four 4-ply yarns can be corded to make a 6½/4/4. The cloth is woven with an unusually high sley, with two ends weaving as one. Warps can be sized if necessary before weaving. The material is scoured to remove the size, wax, and other impurities which would retard wetting and the resultant swelling of the fibers. Also it can be treated with a mildew-proofing agent. For water-repellent canvas, raincoat fabrics, etc., different yarn counts and cloth constructions are employed, but the same general principles of using a large number of warp ends of low-twist yarn are followed as in above-described fire-hose fabric.

One of these fabrics, for example, is a 7-oz. oxford 162x66, made from 80/3 warp and 42/2 filling. Singles yarn for the warp are spun with a twist multiple of 2.7, and are plied with a somewhat higher twist multiple. The water-repellency of this fabric is further increased by treatment with Velon (Zelan). An experimental fabric produced in this country is a 136x52 oxford made with 60/3 yarn in both warp and filling. For spinning the singles yarn for the warp, a twist multiplier of 2.75 is used.

THROWING TESTS Aid Yarn-Quality Control

HIGHLIGHTS: Program for Crepe, Voile, Hosiery, and Combination Yarns—Incline-plane Machine Discloses Hidden Properties—Should Supplement Usual Methods and Equipment—Plot Results on Charts.

By C. W. BENDIGO
Assistant Editor, Textile World

A TESTING PROGRAM for quality control in synthetic yarn throwing plants can include up to a dozen items. It can start with twist testing and stroboscopic checking, then proceed on through incline-plane analyses down to special tests for particular conditions. First should be considered why such a program is desirable, what will be its objectives, and how results will be achieved. There is no point in instituting a program just for its own sake, as is sometimes done. The objective should be product control, so that at all times the quality of the product is known and so that complaints and troubles are forestalled, rather than merely corrected after they occur. Also, such a program must be able to indicate clearly that its cost is more than repaid. In some plants, if past records have been kept, this can be shown definitely. In most, exact measurement is impossible for the same reason that it is impossible to evaluate accurately the cost of accidents that did not happen.

It may be that the program outlined here will cost some plants no more than is currently being paid for this type work but will entail merely a change in compiling and using data. All testing records should be reduced to chart form, perhaps similar to those shown in the articles on quality control in the December, 1943, and January, 1944, issues of TEXTILE WORLD.

ACCURATE TWIST BASIC. A throwster, primarily, is interested in twisting yarn accurately. For this, the two fundamental testing aids are a twist tester and a stroboscopic tester. The frequency of twist testing varies enormously, from occasionally to daily per machine. It will vary some due to the type and condition of the machines, but a safe rule to follow is: (1) to have each machine tested every time it or the yarn on it is changed and (2) then to retest in a cycle that is slightly less than the time to produce a doff of yarn. This applies, of course, to the twisting of single-end crepes and voiles only. The first part of this rule should apply without exception for all yarns, but the second would require more testing than is necessary when throwing combination yarns, hosiery yarns, or any under 25 t.p.i. The original testing reports should be reviewed and signed by the immediate overseer, who will then prepare, or have prepared, a summary of the report for the throwster or whoever is responsible for yarn quality.

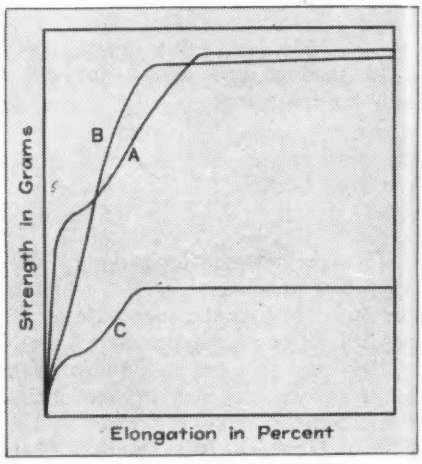


Fig. 1. Incline-plane record of rayon, A is normal yarn, B has previously been overstretched, and C is cut yarn.

Stroboscopic testing should be much more frequent than twist testing. For hosiery, and crepe twisted yarns, daily checks are not too frequent; for combination yarns, once a shift is recommended. The speed with which this testing can be done makes it so inexpensive that it should be the most frequent test made. Most of the value of the test is lost if adequate records are not kept. The department supervisor should observe from the records each instance of wrong spindle speed found and should summarize and classify them for the benefit of the quality-control man.

LATENT DEFECTS FOUND. Thrown yarns may have exactly the correct number of turns per inch, and they may have been soaked correctly, but

Fig. 2. The portable stroboscopic instrument is an essential for quality thrown yarn. *General Radio*

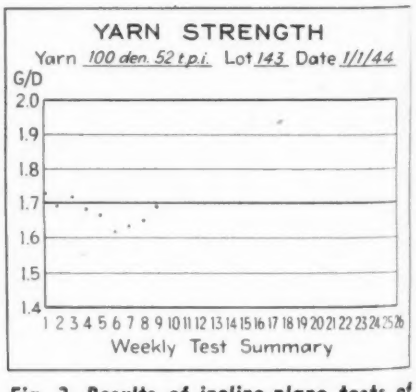


Fig. 3. Results of incline-plane tests of thrown yarn expressed in grams per denier on quality-control chart.

still yield an inferior woven or knitted product. A recording incline-plane machine can do much to prevent this from happening. Each synthetic yarn (raw, partly processed, or thrown) draws its own typical chart on this machine. Any raw or thrown yarn that carries inherent physical defects will produce a line that varies from the normal so that a study of the abnormal line will frequently suggest the cause of the difference. For example, in Fig. 1 line *A* represents a normal rayon yarn, line *B* indicates an over-stretched rayon, and *C* a cut yarn.

Incline-plane tests are slow and expensive but, they can often predict the results that will appear in finished fabrics. To illustrate, yarn such as appears in line *B* on Fig. 1 will tend to finish narrower if used for filling in woven cloths, or to cause tight rings in finished hosiery. If rayon such as this is used in warps, tight ends probably will result, which, if in a printed fabric, may later pull a thread with the pattern color into the body color and vice versa.

Mention should be made that the higher the twist in the yarn the more will be the normal variation in incline-plane records. This observation brings to light rayon throwsters' most difficult problem: uniform tensions in all operations.

Incline-plane results should be tabulated to show the minimum, maximum, and average of the following items: (1) strength, (2) elongation, and (3) yield point. These figures should then be plotted on records which have fixed lines between which the reports must be kept. Such a charted record is shown in Fig. 3. In order to get the strength in grams per denier, as shown, the denier size of the sample must first be determined by use of a reel and quadrant, or reel and scales. Knowing the denier of each yarn run is valuable in itself, as it permits accurate calculation of the percent of contraction, it can assist in indicating a change in practices, and can show changes in denier of either raw or thrown stock. A comparison of numerous tests of raw denier and soaked denier also shows the amount of material taken up from the soaking bath or previous process, such as nylon sizing, or rayon oiling. Of course, these denier tests are almost valueless if not conditioned or, at least, corrected for the moisture the yarn contained at the time of the test.

SOAKING CONTROL. The amount of material taken up in the soaking bath is of such importance that any complete quality-control plan must include definite means to be sure that this take-up is uniform. This can be done by weighing each batch of yarn before it is soaked and after extraction. The amount of take-up can be expressed in percent, and on critical crepe cloths experience will show that a variation of over 2%, plus or minus, is dangerous. The quantity of soaking solution remaining is only part of the story here. The life of the bath and the total soaking time must also be rigidly controlled.

When throwsters' tints must be used, they entail a series of tests which should be no less than: (1) initial checking for fugitivity of all new colors or new containers of tint opened, and (2) weekly test for fugitivity of all tinted yarns in the plant. These tests should be made under the minimum conditions that will be used in boiling off the gray product and should be recorded, of course.

An altogether different type of testing is currently being considered as a logical part of a throwing quality-control plan. This is the regular checking and recording of the breaks in winding and spinning, as well as those in redrawing where that operation is performed. These figures are primarily of interest to the cost department, but should be summarized and plotted for the throwster or whoever is in charge of quality control. Obviously, an increase in breaks at once indicates either poorer raw stock or damage in processing. If the former, it may indicate that some yarns cannot be run as profitably as others. If the latter, that a correction of practices or equipment is needed.

Combination-yarn throwing plants need to perform additional testing in regard to tensions applied to each component yarn. For example, on 150/150 combinations the tension on the acetate must be kept considerably higher than on the crepe to balance the contraction of the two in the final thread. This is difficult to do since there appears to be no really satisfactory tensiometer for this purpose. Tension testing should be an extremely important part of any throwing program. It is unfortunate that this is hindered by lack of proper instruments.

Densiometers are somewhat more accurate than current tensiometers. They, or some method of testing for firmness of packages, are needed, particularly in the coning operation. Usually limits are set up which if not adhered to, mean that re-coning is necessary. The number of cones which exceed the limits, expressed either as a total or as a percent of those tested, should be recorded to be sure that here a predetermined quality is maintained.

Other tests that are optional in a throwing plant are water analyses (softness, pH, etc.), oil fat determinations, seriplaning, and microscopic studies, such as of cross-sections. Various so-called crepage tests are sometimes made, but the problem here, generally, is developing a satisfactory technique.

Previous experience has shown that filament-count tests are normally not needed. However, they are indicated many times when mixing of yarns is suspected. Raw yarn boiloff tests also are not generally needed but can be used along with soaked yarn boiloffs for greater accuracy.

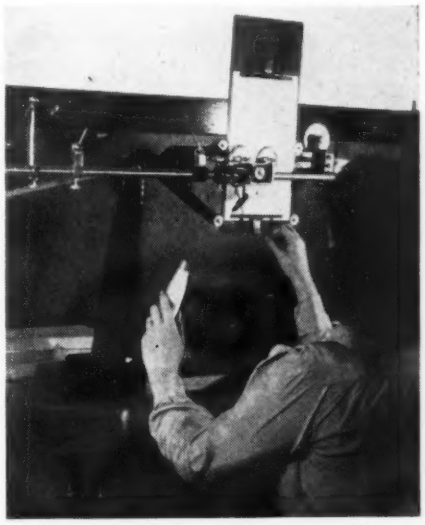


Fig. 4. Incline plane tester can be used to find cause of inferior yarn and to predict behavior of many abnormal yarns in ultimate fabric. *Henry L. Scott Co.*

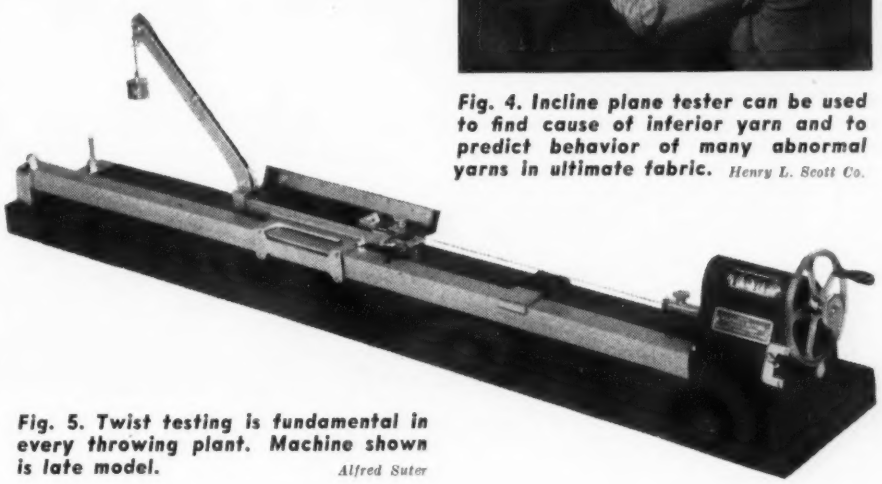


Fig. 5. Twist testing is fundamental in every throwing plant. Machine shown is late model. *Alfred Suter*

Eliminate Waste in COTTON SA

Everybody will agree that the present method of sampling and marketing cotton is wasteful and inefficient. Probably not everybody will agree that the new system proposed in the following article is the ideal one. Some may think that it is no better than the present system. Others may believe that it is a step in the right direction, but that it can be improved on. The editors of TEXTILE WORLD would like your comments on it—favorable or unfavorable.

HIGHLIGHTS: Cost of New Bagging Is Nearly $10,000,000 Annually—Proposed New System Will Eliminate Cutting of Bales—Make 80% Saving.

By RAYMOND W. MITCHEM

UNDOUBTEDLY YOU HAVE NOTED the condition of bales of cotton received during the summer before the new crop came in. Undoubtedly you have been appalled by the appearance of these bales as compared with newly packed bales. But have you ever stopped to consider the amount of waste and expense which are inherent in the present method of sampling and marketing cotton? Have you ever given thought as to how present practices could be improved, with a resultant saving of several million dollars annually?

A new bale of cotton is pictured in Fig. 1; an old bale, in Fig. 2. The bale shown in Fig. 2 is not an exception; and in fact, some bales are in even worse condition. However, the average condition of bales received is better illustrated in Fig. 3.

At the gin good bagging is placed around the bale. When the bale is sold, a large hole is cut in the bagging and a sample of cotton removed. This procedure is repeated each time the bale is bought or sold. Most of the cotton received in the late summer has been stored—some of it as much as 15 years. During this time the cotton has been bought and sold many times, a sample being taken each time by the seller and another by the buyer. The writer has seen some bales that had been cut as many as 16 times for samples. Others had ties removed so that samples could be taken from different parts of the bales. Some of this cotton had been stored in wet places causing

COMPARISON OF TWO METHODS OF BALING COTTON

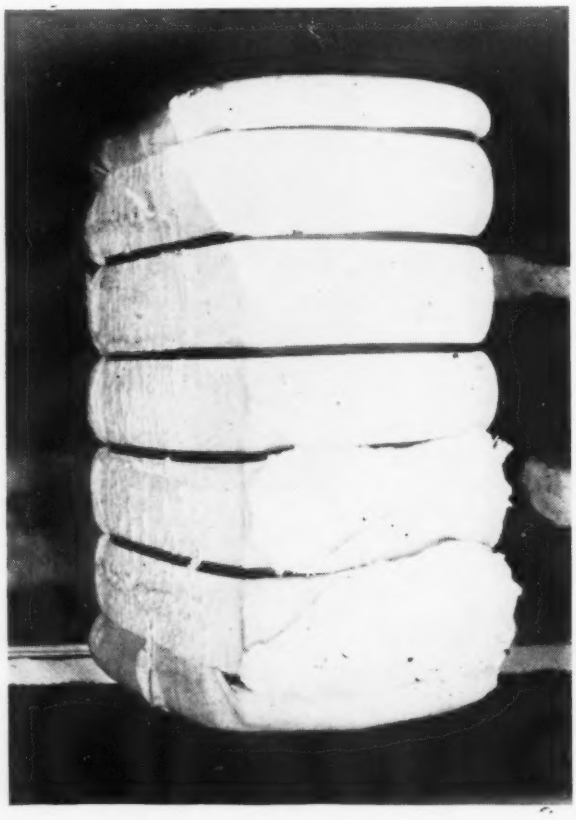


Fig. 1. New bale of cotton.

Fig. 2. Old bale of cotton.

SAMPLING and MARKETING

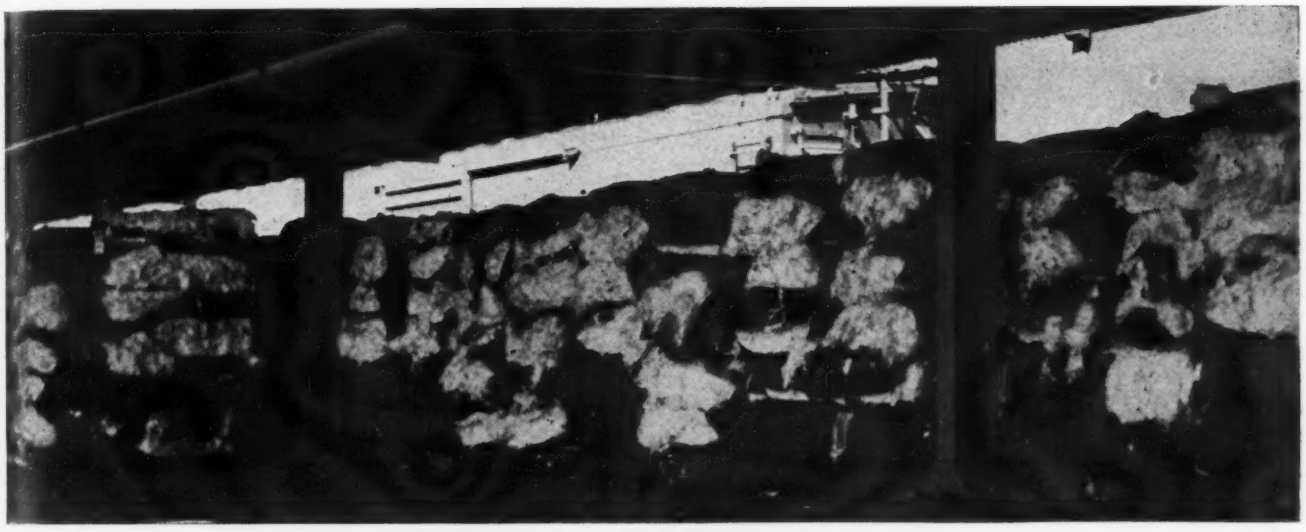


Fig. 3. Average condition of cotton bales as received at mill.

the bagging to rot off the bottom of the bales.

WASTEFUL AND EXPENSIVE. Obviously, this system of sampling is wasteful and expensive. First, when the bagging is cut, it is ruined, and must be reworked before being used again. Second, cotton is lost at each cut. New jute bagging costs approximately $1.50 per bale. Reworked bagging costs $1.10 to $1.20 per bale. New cotton bagging costs approximately $1.75 to $2.00 per bale.

At present jute and cotton bagging will last an average of two seasons. Very little reworked bagging can be used a second time.

There are records of jute bagging in perfect condition on a bale of cotton 65 years old. Cotton bagging should last equally as long. In continuous use, bagging, if taken care of and stored in dry places, not cut to pieces, should last 25 to 35 seasons. However, in practice much cotton is stored out in the open on the ground, reducing the average life of the bagging to approximately 10 years.

The 1942 Cotton Year Book of the New York Cotton Exchange shows the average annual production of cotton in the United States for the last 20 years to be 13,216,400 bales; for the World, 25,968,650 bales.

SAVING POSSIBLE. Now assume that we use 96½% jute bagging at $1.50 a bale and 3½% cotton bagging at $1.87 a bale. The cost of new bagging for 2 years will be:

Jute—		
12,753,826 bales @ $1.50	=	$19,130,739.00
Cotton—		
462,574 bales @ $1.87	=	865,013.38
		$19,995,752.38

Cost for new bagging for 10 years will be: $99,978,761.90.

If a system can be worked out to make bagging last 10 years instead of 2 years, the saving over a 10-year period will be $79,983,009.52 or approximately $8,000,000 a year.

To eliminate the present wasteful practices, the writer suggests that a new system for sampling and marketing cotton be adopted. In working out the broad outlines of the proposed new system, he first asked himself:

1. Is it necessary to sample a bale of cotton each time it is bought and sold?
2. Does the staple and character of cotton change every day, week, or month?
3. Is the art of cotton classification so indefinite that no two people can agree on a grade?

The answer to each of these questions, obviously, is: "No."

PROPOSED SYSTEM. Apparently, then, some such system as the following could be adopted.

1. Each gin would have the services of a licensed cotton grader and classer who would staple and grade each bale of cotton as it is ginned.
2. The grade originally established would be permanent, and in all future transactions would be bought and sold as of that grade.
3. The cotton classer at the gin would be responsible for the correctness of the grade and staple.
4. A sample of cotton weighing approximately 7 lb. would be taken from each bale at the gin, placed in a waterproof paper envelope 9x16x2 in. with flap, fastened under the two middle ties on one side of the bale. Samples could be taken from the envelope for examination at any time, but could not be returned to it.
5. Any disagreement between the purchaser of the cotton and the licensed classer over staple or grade would be settled by arbitration, using established procedure.

A word is necessary in regard to the licensed classers. For the system to work, these men must be experienced graders and classers of high caliber. Such as are now employed in cotton mills and warehouses. In fact, many of the licensed classers would be recruited from the warehouses.

It would be logical for the cotton manufacturing industry to assume the leadership in developing and adopting a system of cotton sampling and marketing along the broad lines indicated above. If the industry itself is not inclined to take the lead, including licensing of classers, the new system might be inaugurated under one of the Government agencies, such as the U. S. Department of Agriculture or National Bureau of Standards.

TO CURB ABSENTEEISM

THE Fighting Front
ALL UNDER ONE FLAG
THE Working Front
IT'S 60° BELOW UP THERE
BUT
THE Yarns YOU MAKE
KEEP OUR BOYS
Warm
MEN AND WOMEN OF ENERGETIC WORSTED CORPORATION ... IN THE SERVICE OF THE NATION
LET'S KEEP OUR
PROMISE TO THE
ARMED FORCES
MEN AND WOMEN OF ENERGETIC WORSTED CORPORATION ... IN THE SERVICE OF THE NATION

Fig. 1. Flag display, over-all size 4 x 7 ft., which appears in about 60 different parts of the Bridgeport plant of the Energetic Worsted Corp.

HIGHLIGHTS: Five-Point Program Keeps Workers on the Job, Newspaper Advertisements, Direct-Mail Appeals, Posters, Folders, Parties Stress Employees Part in War Effort—Campaign Prevented 30% Drop in Production During Summer Months.

A "HELP MORALE PROGRAM," worked out under the direction of John J. Hosey, president, Energetic Worsted Corp., reduced absenteeism, maintained production at a time that normally would have resulted in a 30% production drop because of pending policy changes and Government regulations, and brought back former employees and added new workers to the payroll of this yarn plant.

This program consists of five points, some of these being used only at the Bridgeport, Pa., plant. A number of the program points were used, and practically the same promotional material was utilized, except for minor changes, by the P. McGraw Wool Co. unit in Pittsburgh, the top and yarn plant; and by Joseph A. Middlebrook, Inc., the wool combing plant of this group located in Camden, N. J.

The five points covered by the morale program, and which have been responsible for curbing absenteeism, consist of the following: (1) Advertisements scheduled in local newspapers to correspond with the periods of greatest absenteeism. (2) Follow-up of the newspaper advertisements by mailing reproductions to each employee and each former employee. (3) A series of plant posters and displays placed at various locations throughout all the plants and changed at frequent intervals. (4) Pay checks inclosed in folders on which the wording is changed continually. (5) A party given to stimulate interest of employees in their work.

ABSENTEEISM. Experience over the last few years indicated that absenteeism increases during the summer months. During 1942 it totaled 10%

ENERGETIC Boosted Morale

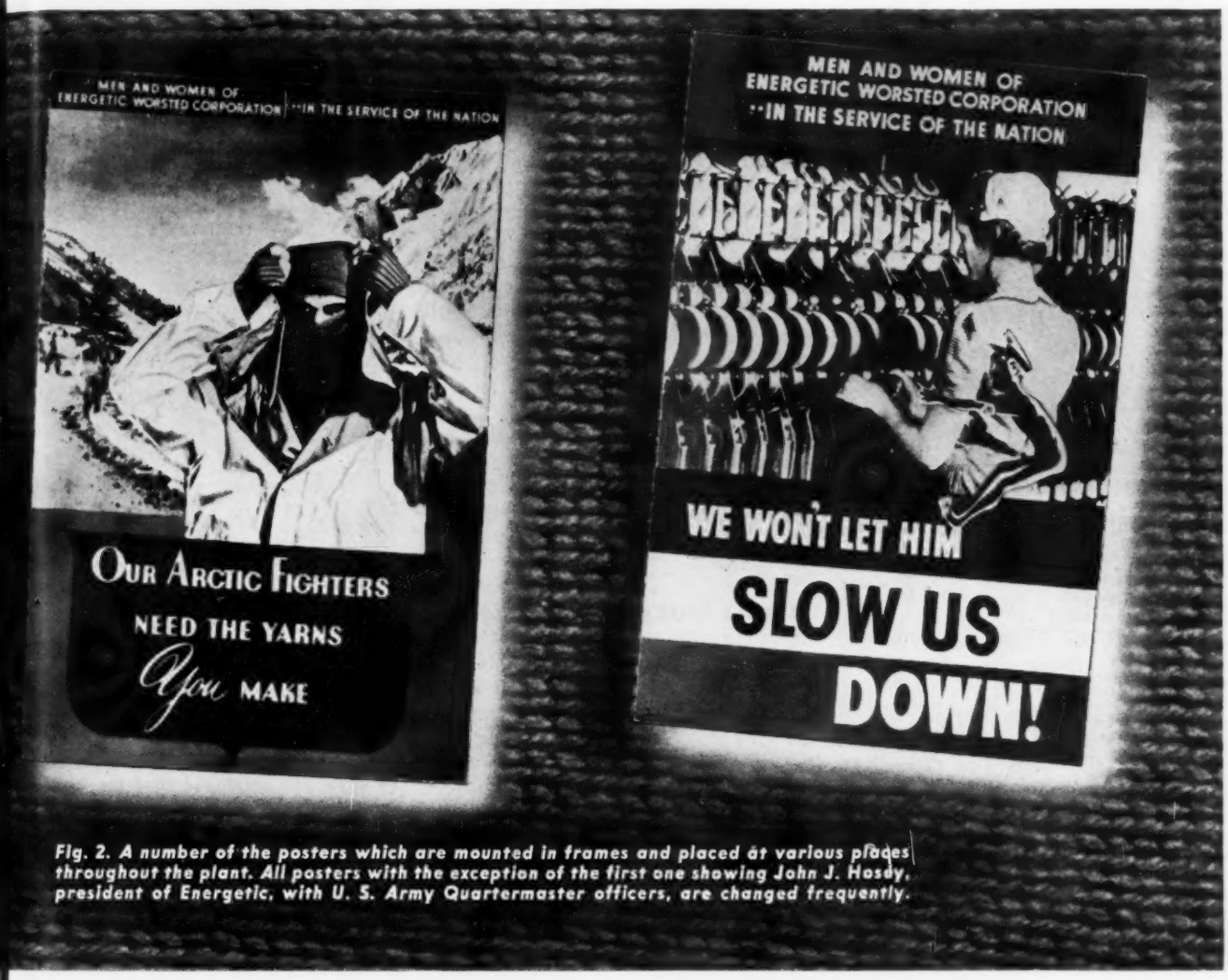

MEN AND WOMEN OF ENERGETIC WORSTED CORPORATION "IN THE SERVICE OF THE NATION
OUR ARCTIC FIGHTERS NEED THE YARNS You MAKE
MEN AND WOMEN OF ENERGETIC WORSTED CORPORATION "IN THE SERVICE OF THE NATION
WE WON'T LET HIM SLOW US DOWN!

Fig. 2. A number of the posters which are mounted in frames and placed at various places throughout the plant. All posters with the exception of the first one showing John J. Hosey, president of Energetic, with U. S. Army Quartermaster officers, are changed frequently.

in May; 12½% in June; 17% in July; 17% in August; and 9% in September. The year 1943 started off with absenteeism showing approximately the same percentages. However, with 20% payroll deductions starting in July, and with a change from a two-weeks vacation to a one-week vacation with pay, similar plants showed a 40% drop in production. Accordingly, it was decided to use local newspaper advertisements, with follow-ups mailed to the homes of the employees, in an attempt to prevent an impending production drop.

A study determined that the period of greatest absenteeism during a work-week came at the end and the beginning of the week. A great number of employees were formerly content with two or three weekends at the seashore, etc. However, the study revealed that quite a number of employees, mostly girls, would be off from Friday to the following Tuesday so as to avoid traveling over weekends. This tendency would undoubtedly be greater over the Fourth of July, as in 1943 this holiday was on Sunday.

With these factors in mind, it was decided to close the plant on Friday before the Fourth and open on the following Wednesday, the vacation being with pay. Absenteeism tendencies among employees would be very high at this time; hence the Help Morale Program was purposely held up until Friday before the Fourth, at which time the first advertisement appeared in the local, afternoon paper.

The first advertisement was an appeal to men and women of Energetic to be back on the job Wednesday morning. Also, it stated that 7,852,930 war garments had been made from yarn spun by the employees during World War II. If everyone had worked, yarn for 1,177,939 additional garments would have been made.

The Tuesday newspaper carried a follow-up ad entitled "TOMORROW we, the people of Energetic are going back to make the yarns that keep our fighting men warm . . ."

THE FOLLOW-UP. Each of the advertisements appearing in the local newspaper was reproduced and a copy mailed to the employees' homes on the day it appeared.

Another mailing program was started. It consisted of sending to each employee and former employee a four-page folder describing his job and the need by the armed forces for the product he produced. The front page of folder bears a photograph taken in the office of Col. Brady, former commanding officer, Philadelphia Quartermaster Depot; with Col. Jones, director of procurement; Capt. Gibbons, contracting officer; and John J. Hosey. Greatest possible production is promised by Mr. Hosey.

When this folder is used by the P.

Fig. 3. Another of the original posters used as a part of the Help Morale Program at Energetic.

McGraw Wool Co., the picture of Patrick McGraw replaces that of John J. Hosey and the title of the folder reads "America and its Allies Need the Top and Yarn You Make," instead of simply "...the Yarn You make," as appears on the Energetic folder. When the Joseph A. Middlebrook, Inc., plant uses the folder, the picture of Joseph Middlebrook is used and the title changed to read "...Top," as this mill is a combing plant. A special set of these folders was also prepared for new employees and addressed with the words, "Welcome To ....." —the employee's name being inserted in the space provided.

PLANT POSTERS. Throughout the Bridgeport plant are placed about 60 flag displays, as illustrated in Fig. 1. These displays are so located that they appear in each department of the mill.

Special mounting frames were constructed for holding a series of posters, 20x30 in., which are in flag colors to tie-in with the flag display. The top of the frames and also the posters are red, the sides white, and the bottoms blue. Five original posters are shown in Figs. 2 and 3, which are mounted, one in each frame. These posters have proved to be great morale builders, as they point out to the employee his responsibility in keeping the armed forces supplied with yarns for clothing. A continual change is made of these posters, except the first poster, which is a reproduction of Mr. Hosey with Col. Brady, Col. Jones, and Capt. Gibbons.

Murals of various sizes, ranging from 3 ft. 8 in. x 7 ft., to 6x9 ft., are placed on the walls, depending on available wall space. A representative mural is shown in Fig. 4, an attempt being made to dramatize the many needs for the worsted yarns being spun at Energetic.

PAYROLL CHECKS. Weekly pay checks are enclosed in a folder, a sample being shown in Fig. 5. The words "Thanks to ..... for helping make yarns for our armed forces" appears on the face of the folder, a portion of it being cut away so as to let the name of the employee on the check complete the wording. Photographs dramatizing the uses of worsted yarns are shown on the other side. Wording is changed continually.

A change was necessary in plant operation schedules in July, and while detrimental from the standpoint of production, it acted as a morale booster for the employees. The plant had been operating on two 40-hr. shifts, which are completed at midnight Friday, and then an extra 8-hr. shift run on Saturday, using the pick of the two shifts. This 8-hr. shift was 30% more efficient than the average of the two regular

Fig. 5. Folder used to inclose employee's pay check. It is so designed that employee's name appearing on check appears beneath slot, completing the message appearing on the face.

Fig. 4. One of the murals placed on the walls throughout the Bridgeport plant to show the employee that the yarn he is making is vital to the Allies.

shifts. However, with payroll deduction, it was found that the mill had to go onto a 5-hr. shift, instead of an 8-hr. shift.

The employees found that by working 5 hr. overtime at time-and-one-half wages, they would receive approximately $30. A 20% payroll deduction would equal $5.50. But, if they worked the 8-hr. shift, taxes deducted would equal about $7. For 3 hr. additional work they would have $1.50 additional taxes deducted, retaining only a small fraction for themselves.

The Help Morale Program appears to have accomplished its purpose. When compared with similar plants, a drop in production of 40% was found in others, whereas this program prevented a 30% production loss.

EMPLOYEES PARTY. A continuation of the program involved the planning of a party for the two shifts. Members of the Philadelphia Quartermaster Depot were present, and Major McLeod addressed the employees. The appearance of Army officials at the party gave the employees a better understanding of the vital part that the yarns they manufacture are playing in keeping our forces warm.

MERINO YARNS FOR Army Socks

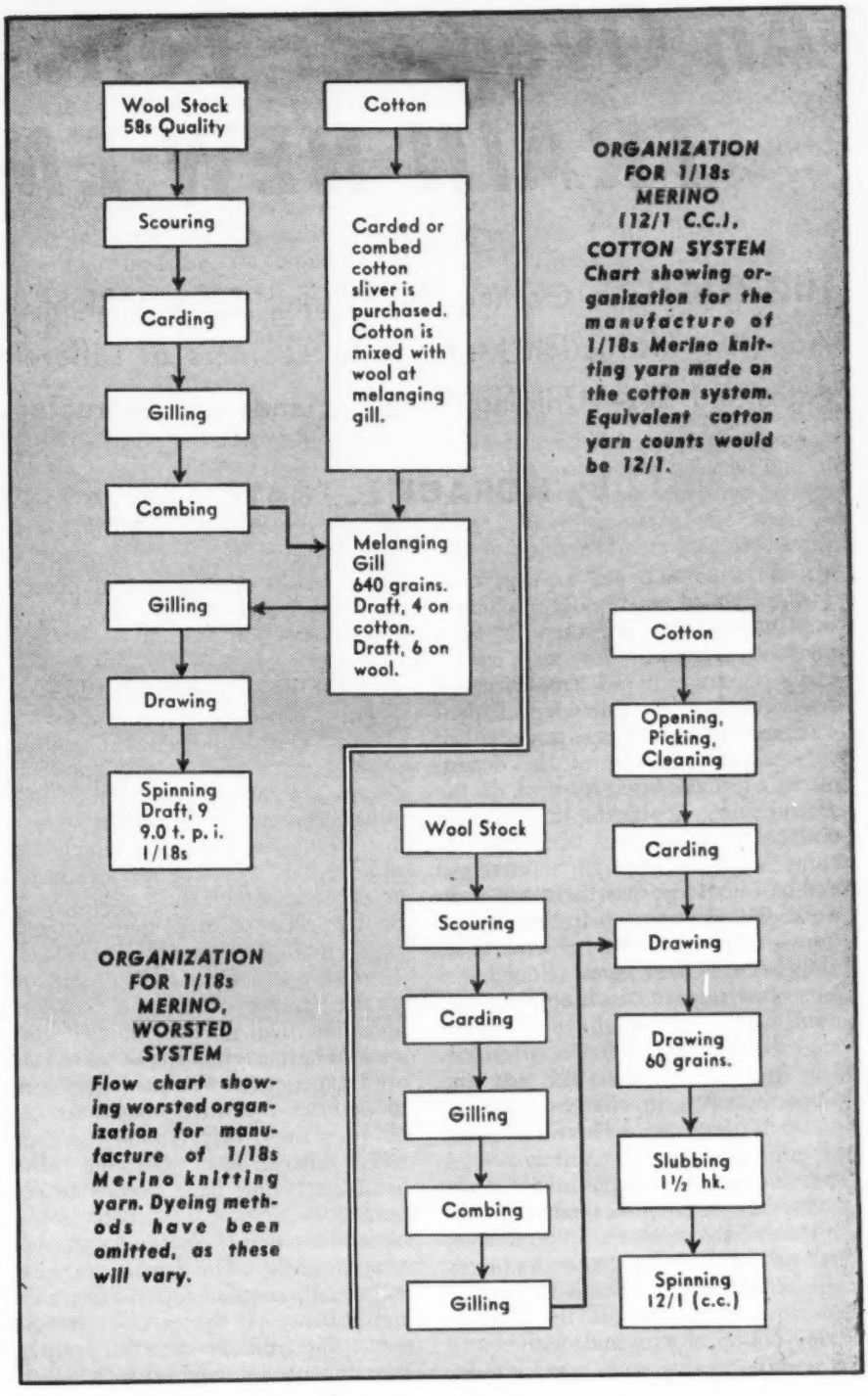
HIGHLIGHTS: Manufacturing Data on Yarns for Light-Wool and Cushion-Sole Socks—Organization for 1/18s and 1/30s Yarns Produced on Worsted and on Cotton System.

ANY PROCUREMENT PROGRAM involving 40-million pair of socks will involve bottlenecks. One of the bottlenecks to develop in the current procurement of 26,000,000 pair of light-wool socks and 11,000,000 pair of cushion-sole socks, is the scarcity of wool yarns required in their manufacture. Accordingly, the accompanying information has been prepared to assist mills in producing these yarns so urgently needed.

Importance of this procurement program is pointed out by the assignment of a preference rating of AA2X, W-7 to the delivery of these socks. Also, wool may be all or part foreign, a departure from recent requirements specifying the use of domestic wools in Army procurements.

Specifications covering light-weight wool and cushion-sole socks have been revised to make procurement easier. Changes made involve not only those concerning the actual construction of the sock and widening the range of machines that can produce the item, but also in the sizes of wool yarns used. A general downward revision has been made, permitting coarser yarns to be used and a lower grade of wool employed.

WOOL BLENDS. Specifications covering both types of socks require a wool content of 50%, exclusive of mercerized reinforcing yarn. Two ends of merino yarn may be used or one end of worsted yarn combined with one end of cotton yarn may be employed to meet this requirement.


Wool Stock 58s Quality
Scouring
Carding
Gilling
Combing
Gilling
Drawing
Spinning Draft, 9 9.0 t. p. i. 1/18s
Cotton
Carded or combed cotton sliver is purchased. Cotton is mixed with wool at melanging gill.
Melanging Gill 640 grains. Draft, 4 on cotton. Draft, 6 on wool.
ORGANIZATION FOR 1/18s MERINO (12/1 C.C.), COTTON SYSTEM
Chart showing organization for the manufacture of 1/18s Merino knitting yarn made on the cotton system. Equivalent cotton yarn counts would be 12/1.
Cotton
Opening, Picking, Cleaning
Carding
Drawing
Drawing 60 grains.
Slubbing 1½ hk.
Spinning 12/1 (c.c.)
Wool Stock
Scouring
Carding
Gilling
Combing
Gilling
ORGANIZATION FOR 1/18s MERINO, WORSTED SYSTEM
Flow chart showing worsted organization for manufacture of 1/18s Merino knitting yarn. Dyeing methods have been omitted, as these will vary.

The merino yarn may be spun on either the worsted system or the cotton system, a representative layout or organization of each being given.

Wool used in the blend for body yarns should not be lower in grade than 56s and not higher in grade than 60s. Wools for the all-wool terry stitch should not be lower than 50s and higher in grade than 56s. These wool grades are lower than those specified in former sock procurements in view of controlling shrinkage. Quartermaster tests have indicated that the recent changes in wool grades have reduced shrinkage in wool socks by one-third.

When a merino yarn is being made, the wool blend is laid down according to standard practice. The cotton is prepared in accordance with normal practice in a cotton mill. If a mill is operating on the worsted system, the wool top and the cotton sliver are blended together at a melanging gill box. The resulting top is then processed the same as any other top. In the cotton system, the combed worsted top and the cotton sliver are brought together at the drawing frame. Generally, two additional drawing operations are given to the resulting sliver, which is then processed as if it were entirely of cotton. Cotton mills not

(Continued on page 152)

An Overseer Tells How to TRAIN NEW EMPLOYEES

HIGHLIGHTS: Getting the Worker Started Right — Adapting Instruction Methods to Learners of Different Ages and Sex—Utilizing Second Hands and Instructors.

By HORACE L. PRATT

IN SPITE OF ALL THE MATERIAL on the training of employees which is available to foremen, there is some question as to just how well we are really training our new employees. A few weeks ago the following incident was reported by the superintendent of a large mill. In one of the departments a girl was hired for work on the second shift. At starting time the second hand pointed out a certain machine being operated by another girl and told her to go over there and go to work. He gave her no further instuctions—not even telling her what to do with her coat and purse. Four hours later the regular machine operative went home, leaving the new girl to tend the machine. That is, after only four hours' instruction, the new employee was left in charge of an important operation. This made the superintendent wonder just how slack some of the other departments might be in their training methods.

It has always been important to give proper training to all new workers, but with help scarce, with a high labor turnover, and with the need for every pound of yarn and cloth that it is possible to produce, a good training program is of even greater importance than ever before. The foreman is likely to offer as an excuse for his sloppy training methods that he is so busy with the details of getting production and fighting bad work that he does not have time to "waste" on his learners. True, the foreman is busy, but the writer believes that if he paid a little more attention to the instruction given his new workers, he would find fewer problems requiring his attention.

It is not the purpose of this article to go into a detailed discussion of training methods as they would apply to each department in the mill, but rather to give a few pointers from the writer's own experience and observation which may be of some help to other supervisors.

CLASSIFYING LEARNERS. Learners can be classified roughly into two classes: older workers and younger workers (on an age basis), and these groups subdivided into male and female empolyees. The older workers may be new so far as the mill is concerned, but may have had experience in other kinds of work. Because of their experience and maturity, such new employees usually require less detailed instructions as to rules and regulations, or even as to machine operation than do the younger workers who have not had the benefit of any prior experience. Women, who seem to perform repetitive operations better than men, may require more detailed instructions. On the other hand, once they have learned to perform an operation well, they seldom lapse into sloppy methods, as men sometimes do. The female employee will usually respond to kind treatment and patience on the part of the foreman. She likes to have the foreman compliment her on her work. However, the foreman must be judicious in passing out complimentary remarks to his women employees, as they may have a tendency to be jealous or be likely to give the wrong interpretation to his motives. He must have no favorites.

Younger employees require more detailed instructions, and they need to be told the reason for everything. They may tax the foreman's patience; but they are not children and resent being treated as children. They have not had the experience of the older persons, but they are mentally alert; and the impressions made upon them at this time and the work habits formed during this period will probably be lasting. The foreman has a tremendous responsibility, therefore, in seeing that they acquire correct work habits during this formative period.

The mill management can do the foreman a real service in making certain that the new employee gets the right kind of reception in the employment office. With so many forms to be filled out, records to be made, and questions to be answered, this necessary function may become somewhat tedious to the employment clerk. As a result, the clerk may forget to be patient with and sympathetic to the new employee, who may not see the need for so much red tape in order to get a job. If possible, a private office should be provided where the prospective employee can be seated in a comfortable chair, while his records are being made out, and where all personal questions can be answered frankly and without embarrassment.

THE FIRST INTERVIEW. The new employee should be greeted cordially by the foreman. The welcome which the new worker receives may make a lasting impression on him, and he may be able to make some allowances for some apparent ill-treatment later on, rather than to charge the foreman with being an old grouch who hates everybody.

The foreman should have a talk with the new employee before the latter is assigned to a job. Incidentally, Monday morning, at starting time, is usually a poor time to do this. If possible, the new employee should be allowed to come in about an hour after the regular workers have arrived, and the foreman has the situation well in hand.

This interview should be as brief as possible; yet should cover every essential detail which the new employee should know before he is put to work. The following items are important and should be included in this conversation:

1. A brief summary of the operations performed in the department, and how they tie in with the other departments of the mill.
2. Safety rules and regulations.
3. Rules of the department as regards rest periods, smoking, lunches, cloak rooms, etc.
4. A frank understanding with the

new employee as to his rate of pay and when he will get his pay. (Some States require this by law.) A discussion of the policy of the mill as regards promotions would not be amiss.

5. The policy of the mill as regards organized labor. If the mill has a contract, a copy should be made available for the new employee to read. The foreman should call attention to those parts of the contract which may affect the new worker in the near future; for example, assignment of permanent jobs, absences on account of sickness, and handling of grievances.

6. Any benefits to which an employee of the mill might be entitled, such as vacations, special services, training, and the like.

A booklet containing this information in simple form, together with a digest of the State compensation laws and a resume of State and national labor laws, and possibly a short history of the company and a list of its products, might be issued to supplement the "briefing" of the new employee by the foreman.

The wise foreman already will have paved the way for a warm welcome of the new employee in the department by having informed the assistant foreman or second hand of his coming and by having made arrangements with the employee who is to act as the instructor of the new worker. Proper introductions will be made by the foreman. The department shop committeeman might quite properly be included in this, and possibly other key workers. When a woman is to take over work now being performed by a man, and is to be instructed by a man, be sure that some prominent female employee sees that the new worker is made comfortable, shows her to the rest room and cloak room, and makes her acquainted with some of the other women in the department. Usually the foreman will want to give last-minute instructions in the presence of both the learner and the instructor. Never fail to include a word of caution as to safety in this final talk.

DAILY CHECK-UP. From all this, one might gather that the responsibility of the foreman has now ended and that it is up to the second hand and the instructor-employee to make a good hand of the learner. Such is not the case; the responsibility of the foreman has just begun. A daily check-up should be made, not only on the learner, but on the instructor as well, to see that correct habits are being formed by the learner, and that the methods of the instructor are correct. The foreman should also observe the learner carefully during this period as to his adaptability to the job. The period of time that should elapse before the foreman can be certain that the trainee will or will not be suitable for the job he is learning will vary in each case, and in proportion to the skills involved. If the supervisor becomes convinced that the learner is a square peg trying to fit himself into a round hole, he should try to find something more in the line with the abilities of the new worker; failing in this, he should release the employee before too much time and money have been wasted.

Instructor-employee teaching a learner in a large southern mill.

In most instances the trainee will qualify for the job and should be called in by the foreman for a second interview, in which he should be given an opportunity to express his impressions of the surroundings, the job, his training, etc. A review of some of the general regulations should be made, and safety should be stressed, as the new employee is still in the impressionable stage and will probably not forget what he learns during this period. If the foreman will listen, he may learn something too, as a beginner sometimes sees things which have been overlooked by everyone else.

THE SECOND HAND. As the second hand is usually in closer touch with the help than the foreman, he must be expected to assist in the training of new employees. He observes trainees carefully so that he can help the foreman in his appraisal of their progress. Although the overseer must in the end rely upon his own judgment, he will do well to consider the viewpoint of the second hand in the matter. The instructor-employee should also be consulted as to the progress of the learner and his opinion should be considered before the trainee is put on work by himself.

When it is finally determined that the learner is ready for a job, he should be given an opportunity to try out under the watchful eyes of the instructor-employee, the second hand, and the foreman himself. Do not expect too much from the new man to begin with, and be prepared for some mistakes. It is here that the foreman shows his qualities as a leader and an instructor, when he patiently and tactfully helps the new man over the rough places, and uses the costly errors as object lessons, rather than as occasions for asserting his authority as foreman by bawling out the new man.

CHOICE OF SHIFT. In a mill operating three shifts, the question arises as to which shift is best for training the new operative — the first shift, on which the foreman usually works; or the shift on which the operative is to be used. If this question could be answered strictly on the basis of its merits, the answer would be that the first shift is the best. Unfortunately, however, other factors must be considered. At some mills transportation facilities may be such that the new employee can get to work only on the second or the third shifts; and to insist that he report on the first shift would work an unnecessary hardship on him. In other instances, if an employee works for some time on the first shift and becomes accustomed to these hours, he may decide that he wants to remain on the first shift, and not transfer to one of the other shifts. In fact, the writer has had this very thing to happen in his own department. All things considered, it is probably better, therefore, to train the new man on the shift on which he is to work. The foreman will have to rely heavily on the opinions of the second hand on that shift, and those of instructor-employee. In addition, he should, if possible, spend a little time with the new worker to get first-hand information as to his progress, and should try to arrange to have a little time for preliminary interview as with workers on the first shift. In this connection, the writer believes from personal experience that when the foreman convinces the workers on the second and third shifts that he is as interested in them as he is in the workers on the first shift, he will find the quality of their work improving.

Maintenance of PIPING

HIGHLIGHTS: Regular Inspection Prevents Costly Breakdowns—Welding Eliminates Leakage at Flanges and Joints—Use Globe Valves for Throttling and Gate Valves for Draining—Build Up Joints Cut by Leakage.

By FRED D. MOSHER

HIDDEN DEFECTS in piping often go unattended until outright failure necessitates forced shutdowns. Under wartime conditions repair jobs that require precious time or replacements that may tie up an entire plant must be avoided. The alternative is to have regular piping inspections, scheduled maintenance, and a program of improvements to bring piping systems up to date.

INSPECTION OF PIPING. Systems used for heating purposes, and which are idle several months each year, should have at least three major inspections per year. The piping in such systems should be inspected at the end of the heating season, at which time the need for repairs should be noted. Any improvement in layout that might improve system performance should be considered at that time. The piping should also be inspected at the beginning of the heating season and at least once during the time the piping is in service.

Piping which is in year-around service should be scheduled for inspection at least once a month.

All inspections should be planned to cover the piping in great detail. Emphasis should be placed on efforts to simplify and improve existing arrangements. Piping diagrams are useful in that obvious defects may be spotted quickly.

During inspections the structures on which or from which piping is supported should receive careful attention. The strength of structures and supports have an important bearing on the piping, and they must be adequate to carry the loads imposed on them. Lines should be checked for sagging, weakened hangers, contact of rollers, and evidence that the piping is free to move under pressure and temperature changes. The condition of expansion joints should be such that strains are not carried by the piping to connected apparatus, supporting buildings, or pressure vessels. It should be the duty of the piping inspector to note the condition of adjustable hangers and to observe whether or not ample support and slope are being provided. The existence of vibration must not be overlooked. Where changes to old piping have been rushed, new vibrations may be introduced, which cause fatiguing stresses to be set up. There are instruments available for checking the vibration in piping systems and they ought to be used to check trouble from this source. In newly installed systems the adequacy of expansion provisions should be checked.

PIPE COVERING. The covering of pipes should also receive attention during inspection. Lines carrying cold water or other cold liquids are subject to external corrosion from atmospheric condensation. It is essential that waterproof materials protect these lines; asphalt materials of durable quality should be used generously for protection. Insulating materials must not be neglected, since they conserve fuel and offer protection to piping carrying high-temperature liquids. Where damaged or inadequate insulation is found, corrective steps ought to be taken as soon as possible. It is not necessary to revamp the insulation of an entire system, but repairs made in keeping with good practice will insulate a system properly. The many plastic insulating materials available make it unnecessary to rebuild the whole job when proper patching will suffice.

In addition to locating leaks, it should be the job of the piping inspector to locate the cause of the leakage. Often, the causes are not apparent at the time of inspection. When piping is subjected to wide temperature variations, leaks seem to develop which defy correction. Flanged joints and valves are quite frequent offenders in this regard.

The practice of eliminating flanged joints in piping by welding has gone far to eliminate leakage in steam and water piping. Inadequate expansion provisions or poor anchoring supports may also be the cause of leakage. Flange leakage may be difficult to correct, and in some instances it may be necessary to revise the arrangement because of original bad alightment of the joint. Increased capacity may have rendered expansion provisions inadequate so that leakage occurs because of sprung joints. Leaks, if small, may not account for a serious loss if the fluid is steam or water. But the action caused by leakage may erode flange faces and destroy gaskets and insulation. The need for careful attention to small leaks cannot be stressed too much.

Careful inspection will uncover ways and means, in many instances, of improving piping or reducing the amount of time required for maintenance. Joints should be re-gasketed at regular intervals and before leakage occurs. To prevent leakage caused by temperature changes, boilers should be cut in after lines have been completely warmed, ample drainage of condensate must be provided, the piping should be adequately trapped, joints must be maintained in good alignment, and maintenance practice should provide for regular gasket renewals.

When leaks occur in the walls of piping, it may mean that a defect in the metal is the cause. It may also mean that internal corrosion is wasting the material to the danger point. In any event, it is important that the cause be determined.

Internal corrosion will result when dissolved oxygen is released as the pressure in steam lines drop. Good deaeration of boiler feedwater will help remove this cause of piping corrosion. Also, leaks in various parts of piping systems will permit oxygen to infiltrate when the system is under partial vacuum.

One other source of piping corrosion is low pH water. This type of corrosion may be found in feedwater piping or in other piping carrying untreated water at high temperatures. Water, slightly on the acid side, will cause the wasting of the piping over large areas of internal surfaces. This should not be confused with erosion which may be caused by jet action of steam or water at bends or through valves. The cure for acid corrosion is to alkalize the water, while erosion may

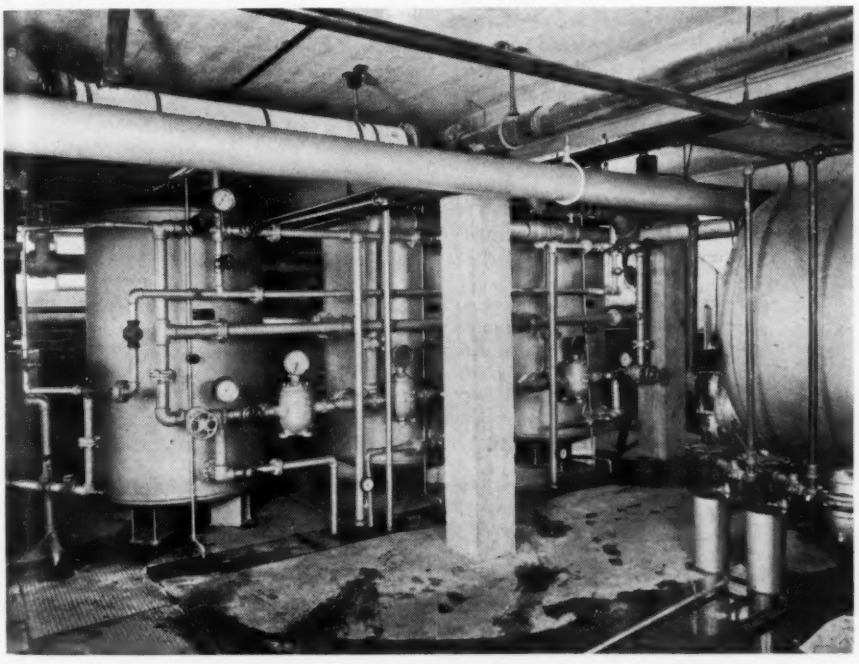
be remedied by rearranging the piping or valves in question or by increasing their size.

VALVE INSPECTION. The purpose of valve inspection should be to determine the actual condition of the valves with regard to normal wear and tear. Valves are subject to constant wear on seats, disks, and stems. Experience indicates that regular inspection of valves may forestall expensive repairs or replacements, as once the cutting or wearing process begins, the internal parts may deteriorate rapidly.

Stems of valves usually become worn because packing is neglected or because of improper handling. The inspector should be able to tell from observance of leaks or the ease with which a valve operates whether or not it requires maintenance service. Wear will be accelerated when the wrong type of valve is used. It is standard practice to provide gate valves for draining and full-flow, whereas globe valves are used in throttling service. Changes made in piping systems may result in the functions of valves being switched, and it is the responsibility of the inspector to check for such defects.

TRAP INSPECTION. Traps should be inspected at the time the connected piping is examined. All traps give trouble sooner or later if not properly maintained. The experienced inspector can determine good or bad operation in a steam trap simply by touch. There should be very little difference between the inlet and outlet temperatures of a trap. Sight glasses on traps, so equipped, are a means of checking the operation of the apparatus. At least once a year each trap should be opened for internal inspection and cleaning.

Traps should be located in proper relation to the equipment served; they should always be below the piping, apparatus, or vessel intended to be drained. Some of the reasons for steam-trap trouble are: over-loaded traps or misapplication, fouled traps, bad maintenance practice and inadequate attention.



A well-planned piping layout, such as is used with this zeolite softener and water heater installation, simplifies inspection. Piping beneath the floor is placed in a trench which is covered with removable metal plates.

PIPING IMPROVEMENTS. When plant changes are made in a mill, it is not always practicable to revamp the entire piping system, and, as a result, new systems are added to old. To meet increased demands for steam or water, the plan of adding new piping to old is a sound one. To make such additions in order to improve plant performance or increase efficiency, such changes are also merited; but, in making them the possibilities of improving the layout of the system should not be overlooked.

Welding, for example, is one method of improving piping systems. By eliminating joints, the necessity for gasket maintenance is reduced and leakage may be cut to a minimum. Welding may also permit the removal of old-style slip joints which are used for expansion and allow for replacement by welded expansion bends.

Low-pressure piping for returning condensate from heating systems is often buried in concrete floors. This obsolete practice is being corrected in many plants either by raising the piping, or, where this is not practicable, the piping is allowed to remain in a trench with removal covers being provided so that the piping can be inspected regularly.

Drainage sometimes is a problem and becomes worse when greater demands are imposed upon an inadequately drained system. Improvements in drainage may be made by the addition or the relocation of traps. Only in extreme cases should traps be located in inaccessible places, or in locations where frequent observations cannot be made because of shafting, pulleys, and other apparatus. Improvements which may be made include relocation, addition of sight glasses to check drainage, and installation of test valves to determine drainage capacity and ability to drain lines.

Since valves are a source of trouble, the number in any system should be kept at a minimum. So-called auxiliary valves are often only an extra expense which is not justified. Many plant operators have been amazed at the number of valves that can be eliminated when such a program is put in effect.

The old habit of providing auxiliary piping is no longer popular. Auxiliary piping means that an almost duplicate system is often installed and kept idle, as a guard against failure that seldom occurs, or it may supplant the regular piping for the week or so each year that the main piping is being repaired or serviced. The expense involved is out of proportion for the use obtained.

MAINTENANCE AND REPAIRS. Where inspection is systematic, maintenance and repairs, other than those occasioned by an emergency, should be based on the inspection report. The follow-up should be such that the results are noted on the original report.

It is not sufficient to wait until joints leak because of deteriorated gaskets before they are renewed, nor is it right simply to tighten up flange bolts to correct frequent leakage at such places. An improperly installed piping system will give trouble, and no amount of superficial repairing will correct it. Joints which have been cut by leakage should be built up and refaced.

There are no savings in welding up a leak in the wall of a pipe if the entire wall is being subjected to corrosion because of oxygen. The defective piping should be removed and the cause checked.

SAFETY FOR OILERS

HIGHLIGHTS: Hot Bearings and Dripping Oil Are Hazard — Close - Fitting Clothes Safest—Automatic Lubrication Reduces Danger of Accidents.

SAFETY INSTRUCTIONS FOR OILERS
1. Clothing of the oiler should be close fitting, with no ragged ends; no torn, unbuttoned, or loose sleeves; no loose or torn trouser legs; no long neckties nor gloves that might become caught in machinery.
2. Oilers should know the correct use of ladders and stepladders, the correct way of placing a ladder and oiling from it.
3. The bearings of several countershafts should not be oiled from one position of the ladder if this involves dangerous reaching.
4. Stepladders should not be placed astride machinery in motion.
5. Care should be taken not to walk or stand on machines while they are running.
6. Idle belts which are hanging about revolving shafting should not be used as supports in reaching bearings.
7. Reaching over moving pulleys or between moving belts or using waste or rags to wipe excess oil from moving shafts are dangerous habits and should be strictly prohibited.
8. Belts should not be thrown off with the hands.
9. Oil holes should be kept clean and free from dirt.
10. The oiler should be careful not to overflow bearings with oil.
11. The spout of the oil can should be kept clean of dirt particles which might prevent the flow of oil.
12. The proper lubricant should be used for the various bearings. The oiler should know the different kinds of oil and grease on hand and the bearings for which they are to be used.

Fig. 1. Instruction chart items should be explained by foreman to each oiler.

IT IS OBVIOUS that there is danger of injury to the man who attempts to oil the bearings of machinery unless he has adequate protection against contact with revolving pulleys, gears, and shafts. It is not so obvious that there is sometimes danger of serious explosions, fires, and wreckage of buildings if certain bearings are not kept supplied with the proper oil film or are over-flowed with oil. These dangers, and the precautions to be taken, are discussed fully in a *Safe Practice Pamphlet* published by the National Safety Council, Inc., of which the following is an abstract.

A high-speed bearing, or a bearing out of alignment, or one set or adjusted improperly, or one with a heavy load will generate excessive frictional heat if a film of lubricating material is not provided to reduce the friction. The result may be:

1. The starting of a fire by ignition of dust, oil, wood, or other flammable material, or vapor, nearby.

2. Freezing of the bearing, in which the revolving member and the bearing expand so that they bind and all motion is slowed down or suddenly stopped, resulting in serious strain to the bearing, the revolving member, and all attachments.

3. The bearing liner, if of soft metal with a low melting point, melts and allows the revolving member to vibrate, likewise exposing the bearing, the revolving member, and all attachments to severe strain.

It does not require a vivid imagination to picture the wide range of disasters likely to result from such conditions.

Use of automatic lubrication is recommended, as it reduces the danger of bearings becoming overheated through neglect, and simultaneously makes it unnecessary for the oiler to expose himself to the hazards of moving machinery. Ball and roller bearings offer so little frictional resistance that ordinarily little lubrication is required for their proper operation. This puts them in a class with automatically oiled bearings as regards safety, except that an automatically oiled ball or roller bearing will operate for even a longer time without attention.

OVERHEATED BEARINGS. In addition to the strain placed on machinery due to the binding effect of overheated bearings, fire dangers of serious proportions may develop under certain conditions. A hot bearing can be the starting point of a dust explosion or a lint fire of enormous proportions. In a chemical plant, where flammable vapors are present, hot bearings are also dangerous. In fact, such results are possible any place where there are flammable dusts, vapors, liquids, or dry materials surrounding, or in contact with, the bearing.

If bearings are necessary in such places, it is obvious that they should be the best type possible for the service demanded of them and that they be given most careful attention while in use. It is entirely possible to equip bearings in extra hazardous locations with devices which will sound an alarm in the event of an excessive rise of temperature. Devices for this purpose are being marketed. Alarms should warn before dangerous temperatures are reached.

In many plants workmen of special training and long experience are designated to inspect and oil shafting prior to the regular starting time of the plant. This plan has not always proved satisfactory, as oilers are sometimes late or delayed in their work, and if the engineer should start the machinery while the oiler is engaged in his duties, a serious accident may follow. This hazard can be guarded against, however, where disconnecting appliances permit cutting off the section the oiler is working on; the oiler should cut out that section and padlock the appliance so that it can not be thrown in. If such appliances are not installed, a safe practice is to require that the oiler report personally to the engineer and see that the machinery he is going to work on is cut out and

(*Continued on page 154*)

How One Mill Aids PAPER CONSERVATION

HIGHLIGHTS:—Both Conservation and Salvage Receive Attention of William Carter Co.—Reduces Size of Forms and Weight of Paper—All Paper Scrap Saved

By H. S. KNOWLTON
New England Editor, TEXTILE WORLD

THE ACUTE SHORTAGE OF PAPER brought about by the war led the William Carter Co., Needham Heights, Mass., underwear manufacturer for more than three-quarters of a century, to plan paper conservation many months ago. Activities center upon salvage of all available paper used in the mills and offices of the company in Georgia and Massachusetts, and upon reducing the over-all amount of paper handled. The acute need to reduce paper consumption in the United States was described in these columns in January. The current voluntary campaign must save a million tons, or the hardships of regimented restrictions will be enforced.

As advocated in the current program, considerable work has been done at Carter in the direction of economizing in the use of forms, standardization of records, reduction in the variety of boxes used in shipments, and re-use of boxes. Part of this work belongs to normal improvement in managerial routines, the paper savings being by-products. Formerly many underwear and foundation garment boxes were recovered to meet changes in products; but now these are re-used by merely pasting new labels over old ones.

There are now over 100 different box sizes in the company's line. Serious study is being given to reducing this number, as well as to adopting lighter box stock; but, in the merchandising of this type of product, goods cannot be folded as advantageously for packing as in some other lines, because of the eye appeal of the customary flat-folded garments.

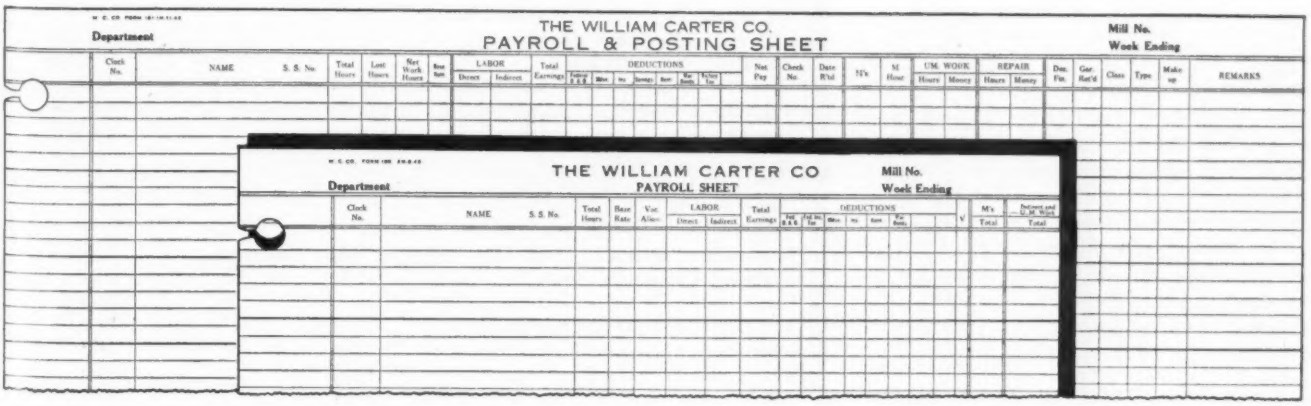
REDUCES PAPER WEIGHT. Weight of paper stock used in order forms has been reduced from 16 to 12 lbs. per ream, a 25% saving on the 50,000 to 100,000 sets which are ordered at one time. Regulations require uniform use of 12-lb. stock, although if thinner paper were permitted for triplicate sheets, say 9-lb. stock, both time in identification and weight of paper would be further saved. It is necessary now to print the word "Triplicate" on the 12-lb. stock.

Carter's payroll forms have been reduced in size. Sheets formerly 14 x 18-in. have been cut down to about 12 x 12-in. resulting in paper saving of 43%. Even greater saving was achieved in another form which was cut down from 14 x 18-in. to the standard letter size of 8½ x 11-in. This permitted use of an ordinary typewriter to handle these forms, and in one department avoided the requisitioning of a special wide-carriage typewriter. This analysis and simplification of forms is a continuing practice in this company.

In the last three months no less than 100,000 lb. of paper scrap have been salvaged by the Needham Heights, Mass., plants of the Carter organization, most of it being sold to paper box makers.

To point up the salvage work, these activities have been put in charge of a veteran employee of 40 years' service, on full time basis. This man is responsible for the accumulation, sorting (carbon paper cannot be used by these processors), boxing and/or baling of paper of all kinds at the Needham Heights headquarters, which is the final center of production and delivery for the several plants. A floor area about 25 x 40 ft. has been set aside for paper salvage. No mechanical equipment is required in normal routine salvage, except where baling and weighing is necessary. Discarded office forms, old letter heads, envelopes, newspapers, paper towels and many other items are collected daily from all departments. To increase the supply of old newspapers, which are useful in packing shipments, the company let it be known through employees that it would pay the going price in cash or War Savings Stamps for these.

Posters supplied by manufacturers of tissues, towels, etc., and typed notices by company officials featuring the importance of paper saving as a war measure are widely distributed through departments. Employee response has been very helpful.



Reduction of size in payroll forms is indicated above. Lighter stock is also used.

Sharp Increase in TEXTILE PR

HIGHLIGHTS: Peak Production Needed While Actual Rate is Now 13% Off—Government Men Have Surveyed Field and Find Personnel Administration the Prime Problem, Cutting Absenteeism Biggest Opportunity

By GLADYS MONTGOMERY
Washington Editor,
TEXTILE WORLD

THERE IS CURRENTLY emerging in Washington a factual picture of production requirements in the cotton textile industry, which, to say the least, has alarming aspects. The essence of it is the gap between estimated requirements and prospective production. War Manpower Commission, War Production Board's Textile Bureau, and the Office of Civilian Requirements are moving more closely together to deal with the situation and formulate a policy to prevent the gap from widening.

MORE NEEDED; LESS PRODUCED. While Government estimates for 1944 cotton-textile requirements have not been disclosed, unofficial estimates place them above the 1942 peak year production figures; likewise, it is indicated that it will be nip and tuck with the industry to equal 1943's much lower production. Although little is known about the details of military textile requirements, it is known that military procurement, after dropping in the early part of the last quarter of 1943, is at present climbing again and facing serious shortages in such fabrics as herringbone twills, poplins, bagging, tent canvas, and sateens. The factor, however, that is causing a sharp increase in minimum essential requirements is the expanding lend-lease and relief-and-rehabilitation requirements, as well as FEA and other Government export demands. At present it would appear that if Government and military needs are met first and the current rate of production continues, civilians might get, in yardage, two-thirds or less of what OCR has estimated as bedrock essentials for the year. Already cotton textiles have shown a drop of about 13% in the production level over peak production of 1942; and a drop of approximately 6% in employment and manpower levels.

To halt downward trends, the Government has started out with an actual, on-the-spot, fact-finding survey of conditions in representative southern cotton mills. A joint mission*, composed of one member from WMC, one from WPB's Textile Bureau and one from OCR, has recently returned to Washington after visiting a number of representative southern mills and field offices of the different agencies. Government policy to deal with the situation will be based on their findings and recommendations, correlated with other known data. The group visited 12 mill managements, representing more than 50 mills in Virginia, North Carolina, South Carolina, Georgia and Alabama, employing in all more than 60,000 workers. The trip included also a cursory plant inspection of six mills, and a conference at headquarters of the Southern Combed Yarn Spinners Association.

The survey did not disclose the existence of new problems, but a great deal was learned about the prevalence and relative importance of the various maladjustments; steps which have to be taken by the mills themselves to solve these problems; the assistance and cooperation being given the industry by field officers of various

* *J. P. Powell, WPB Textile Bureau, Cotton Branch; Alexander Smalley, Assistant to the Vice Chairman for Civilian Requirements, WPB; J. B. Montgomery, WMC, Industrial Allocation Div.*

ARTICLES ON PERSONN

The phases of personnel administration referred to by Washington authorities in accompanying article have all been covered in some detail in TEXTILE WORLD. aid readers who may wish to refer to this material the following listing of pertinent art and items has been prepared, covering issues back to Pearl Harbor:

	Issue
1944	
Labor-Management Committee Aids Production at Bigelow Sanford	March
Posters Aid Employee Morale	March
Training New Employees	March
Safety for Oilers	March
Review Results of Job Methods Training	March
Personnel Problems	February
Textile Workers Press for Wage Increases	January
Poor Reaction from Payroll Deductions?	January
Training Loomfixers Quickly	January
Are Women Suited to Doffing?	January
Should Foremen Hire and Fire?	January
1943	
30 Mills Experiment with Labor-Management Committees	December
Results of Labor-Management Committees at Avondale	December
Better Quill-Room Management	December
Increased Woman-Power Helps Dixie to Run	November
Better Quill-Room Management	November
Piece Work and Bonus Systems	November
Personnel Department Should Hire and Fire	November
Training Loomfixers Quickly	October
Reducing Absenteeism	October
Firth "War Corps" of Young Men Eases Manpower Shortage	September
Training Loomfixers Quickly	August
Should Foremen Hire and Fire?	August
Reducing Absenteeism	August
New Employee Training Plans	July
Manpower Is Key to Textile Output Increase	July
Training New Employees Quickly	July
Streamlined Training – Mill Man Approves TWI Program	July
Training Loomfixers Quickly	July
Clothing for Women in Men's Jobs	June
Training Loomfixers Quickly	June
Manpower Moves in Washington Help Textiles	May
The Accident-Prone Employee Can be Weeded Out	May
Absenteeism: A Fancy Name for Playing Hooky	April

PRODUCTION Imperative

agencies, and the extent to which increased production can reasonably be expected. It was emphasized by the group that whatever recommendations are adopted should move forward simultaneously, since the success of any one measure depends to a large extent on its coordination in point of time with all the others. This is merely to say that the program must move forward as a unit.

PERSONNEL WORK THE KEY. Personnel administration was given as the number one problem of these companies. Since there are not nearly enough personnel specialists to go around, top management in most companies has the burden of formulating and administering the details of personnel policy. The Government observers advocate more objective selection of workers for training and upgrading to specialized jobs, on a basis of native aptitude. Benefits in the way of reduced labor costs and increased worker satisfaction would be realized. However, it is recognized that this cannot be achieved overnight.

Most of the mills visited are doing as much as they know how to do in the way of training, considering the lack of qualified persons to develop and administer training programs. WMC Training-Within-Industry assistance is being used in many mills. One mill is availing itself of all three forms of TWI (Job Instructor, Job Method and Job Relations Training). A trip through the mill disclosed many new labor-saving methods and devices which had been suggested by workers as a direct result of Job Methods Training. The same training enabled the mill to assimilate rapidly a large quantity of green hands. The committee recommends that WMC increase the amount of training service for textile workers.

Several mills have been successful in gradually increasing the proportion of non-whites in their working force. In hiring non-whites, the committee feels that WMC's aptitude tests would be of great value.

Government funds, the reporters contend, should be provided for child care centers where the need exists. A number of mills are operating nurseries and kindergartens so that mothers of young children may work. Only one of the mills visited reported any success in cutting through the red tape to secure Lanham-Act funds or other Federal day-care assistance. Child-care efforts were found to be most important in mills and factories representing large concentrations of employment.

GREATEST OPPORTUNITY. The group maintains that the greatest single opportunity for increased output lies in the further reduction of absenteeism. The rate of absenteeism in the mills visited varied from less than 2% to more than 10%, with an estimated average of perhaps 6%. Many of the mills say that they now have all the workers needed if they would all work regularly.

Four principal factors were cited as the basic causes of absenteeism, namely: failure to realize the essentiality of textile production; shortage of servants for housecleaning and child care; higher-than-usual family income with fewer debts and spending opportunities, resulting in diminished incentive to work; and transportation difficulties. Attendance bonuses and medals have been given workers in some of the mills to reduce absenteeism.

Government investigating officials recommend a publicity campaign of the right kind. Textile workers, draft boards and ration boards should be made more aware of the importance of the industry to the war effort. Posters, bulletins and employee bulletins should be aimed more toward textile production. Except for the tire cord mills, there has been little assistance in this particular respect from the Government other than statements from Army and Navy personnel. Criticism is made that most of the posters available stress the importance of guns, ships, tanks, etc.,

(*Continued on page 156*)

DMINISTRATION

3 continued

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partment of short news stories under the heading "Employee Morale Boosters" has ared in all issues from May, 1943, to date.

Industry Begins to Grasp M-317 and AMENDMENTS

HIGHLIGHTS: Original Deterring Effect of WPB Corrective Order on Distribution and Production Largely Eliminated—Further Amendments Effective on Feb. 21.

WASHINGTON, D. C.

FROM THE STANDPOINT of an operating mechanism, Government and textile officials are looking to M-317, in its present amended form, to distribute priority-rated orders more evenly among mills, and by the same token to narrow the gap between demand and supply of the most needed goods. They agree, however, that it is going to take some time to bring about the shifting of orders called for in WPB's corrective edict. Refusal of the industry to fall in line with the spirit of the order might well lead to more drastic regulations.

It had been apparent for some time that certain mills were overloaded with forced business, while others either refused to fill rated orders or were evading them. The unbalance was threatening the working of the entire priority system. Therefore, M-317 was developed.

RATINGS AND DISTRIBUTION. M-317 has two types of schedules—preference rating schedules and distribution schedules. Distribution schedules are for cotton yarns, fine cotton goods, carded gray goods, etc. Column IV of the order shows the percentage of yarn or fabric production which must be sold on preference ratings. Those quantities may not be sold without preference ratings. Percentages are not the result of caprice; they represent known quantities which will in a calendar quarter be disposed of on rated orders. (Refer to Form 658).

This is the way in which the calculations are made. A requirements committee with representatives of various claimant agencies has been set up. The committee, after considering various claims, divides the anticipated production among them. By stating a percentage in Column IV, which each producer is obligated to accept on rated business, the burden of the ratings is equalized and that, in turn, tends to equalize the proportion of goods which the mills will have for distribution free from ratings.

It is conceded that the percentages in some cases may be too high or too low. This will be corrected by experience. WPB textile officials say that some producers, particularly those who heretofore did not carry their just share of ratings, will continue to duck, *positively*, by avoiding ratings, or *negatively*, by not seeking rated business. They will then claim that Government sights were too high and that at the end of the quarter they should receive relief. However, since in most cases WPB spokesmen say it will not be unduly difficult for the mills to obtain the rated business, and, since it is probable that the percentages are correct, no individual relief will be given. On the other hand, if at the end of the quarter it should appear to the Cotton Branch of WPB that after "good faith" endeavors, mills generally have been unable to obtain rated business (this being indicative that the rated demands will not take up the specific percentages) then an adjustment would be justified.

ALLOCATE 10% FOR EXPORT. Just as an unwillingness to accept rated orders has been manifested by the mills, a similar unwillingness existed with respect to export orders. Since the requirements committee has approved the disposition of approximately 10% for export, it was necessary in the case of fabric distribution to obligate producers to deliver a minimum percentage, generally 10% against rated export orders (Column III). Accordingly, Column IV shows a minimum which must be delivered against all rated orders including the export percentages of Column III.

With the fixing of minimum percentages which all producers must accept, it appeared in many instances that certain quantities could be considered absolutely free from the obligations of PR-1. Therefore, Column IV provides for percentages beyond which rated orders need not be accepted. PR-1 applies up to that percentage.

The other series of schedules contained in M-317 are preference rating schedules. They assign ratings to classes of persons to obtain specified fabrics or yarns to be used as provided in the schedules. This does not mean that the order prevents persons from obtaining textiles without ratings. The order does not prevent those named groups of persons from obtaining the specified textiles for other purposes or other textiles for the specified purposes. Nor does it prevent groups not named from obtaining these or other textiles. Many questions have been raised which were related to the general workings of the priority system rather than simply M-317.

TRENDS AFFECTED BY M-317. After the amendment of Dec. 24, certain factors tended to impede the distribution of goods. According to Sidney Jarcho, of WPB's Legal Division, any rule or condition which changes customary practices or makes people uncertain what they are supposed to do inevitably causes delays. Also, he pointed out, there were many gradual trends that merely became more evident after the amendment was issued.

One other accomplishment of the order was to make the production of vertical organizations subject to rating obligations. For example, the cutter who produced his own goods and was not in the business of selling goods is nevertheless treated as a mill and his fabric production is subject to the distribution schedules.

An interpretation of M-317 and amendments consisting of 34 questions and answers was issued on Jan. 17, 1944. It represented queries of general interest and clarified the order in many respects. On Feb. 21, another amendment was issued. In the main, it clarified the certification requirements in connection with the use of ratings. It adjusted some of the percentages and removed ratings which had been given for hospital clothing and women's work clothing, as well as ratings for certain fabrics formerly given for men's and boys' work clothing. Instead, individual requests will be considered.—G. T. M.

Loomfixers' MANUAL

RAYON AND SILK SECTION—Chapter 9

TAKE-UP MOTION——By H. E. Wenrich

A PRACTICAL PROCEDURE used to obtain better control over the number of picks in a cloth, and one which requires less changing of the pickwheel on a loom that shows excessive take-up, is to build up the take-up drum so the same pickwheel will give approximately the desired number of picks off the loom.

The least expensive method is to leave the worn drum covering on the drum, and place a new covering over the old one so as to build up the circumference of the take-up drum. In time, the right circumference will be obtained. In building up drums, when using other than spiral coverings, close-joining seams should be made. All new coverings can be glued so seams will appear at different places lengthwise of the drum surface. Generally, three or four additional coverings will suffice.

There are various materials available for coverings, such as leather, cork, numerous compositions of rubber, metallic covered emery cloth or paper, and many different grades of garnet or sandpaper.

Leather, rubber, metallic coverings, and some of the cork coverings come in narrow rolls of 2- to 4-in. widths for winding on the drum, as shown in Fig. RS48. Other types of roll coverings are generally obtainable in full-width sheets so it is not necessary to spiral the covering. This type of covering may be glued or tacked to the roll; however, gluing is preferred.

If the worn covering is to be removed, do not use sharp tools, as this results in the gouging out of spots around the drum. Whenever possible, paper-back coverings should be soaked with water for easy removal. After sponging, the water is allowed to penetrate into the covering and within a few minutes the paper can be removed in large strips by pulling in from the drum end. Before recovering, allow the drum to dry, then rub the surface lightly with sandpaper to remove any projections that may still remain on the drum.

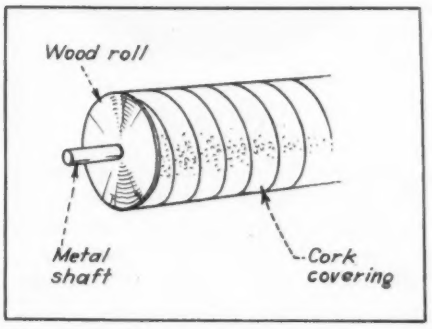


Fig. RS48. Method of spiraling take-up drum covering.

The take-up drum is covered with sandpaper as follows: Lay the roll of sandpaper on the floor and mark the width of the drum on the paper. Allow a length of paper equal to the circumference of the roll and cut the paper accordingly. Tack the paper to the roll, as shown in Fig. RS49, using carpet tacks and staggering them 1 in. from the edge of the sandpaper, as indicated by A. Roll the drum around so the sandpaper overlaps slightly the row of tacks and place tacks at points B. Sand the paper lightly across the drum where it overlaps so as to present a smooth joint. This will prevent creases and starting cuts when the loom is stopped over weekends.

When gluing on new coverings, the top take-up roll and felt-covered pressure roll are removed from the loom to allow easy accessibility to the task. In using shellac, water glass (carton glue), or liquid glue, the substance is placed upon the drum surface when the loom is empty or cloth is out of the way, but when cloth is in the loom, the adhesive is spread upon the covering back. Where seams join, all traces of glue must be removed.

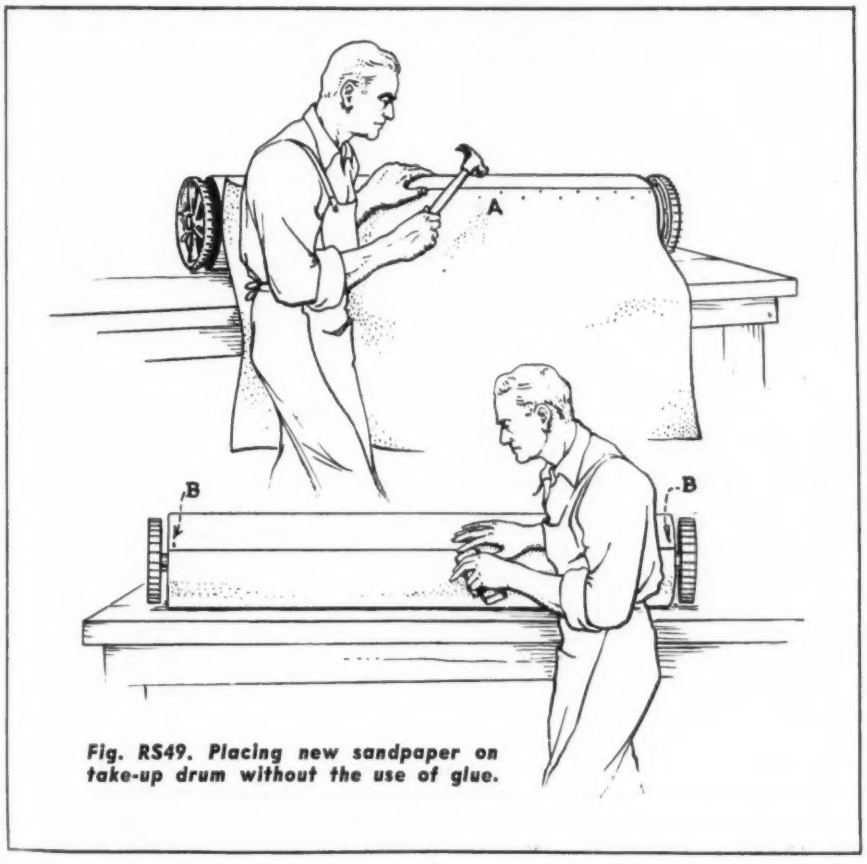


Fig. RS49. Placing new sandpaper on take-up drum without the use of glue.

FIXING Hosiery MACHINES

CIRCULAR MACHINES—Chapter XIX (Cont.)

NEEDLE-REVERSE PLATING—By Julian W. Hughes

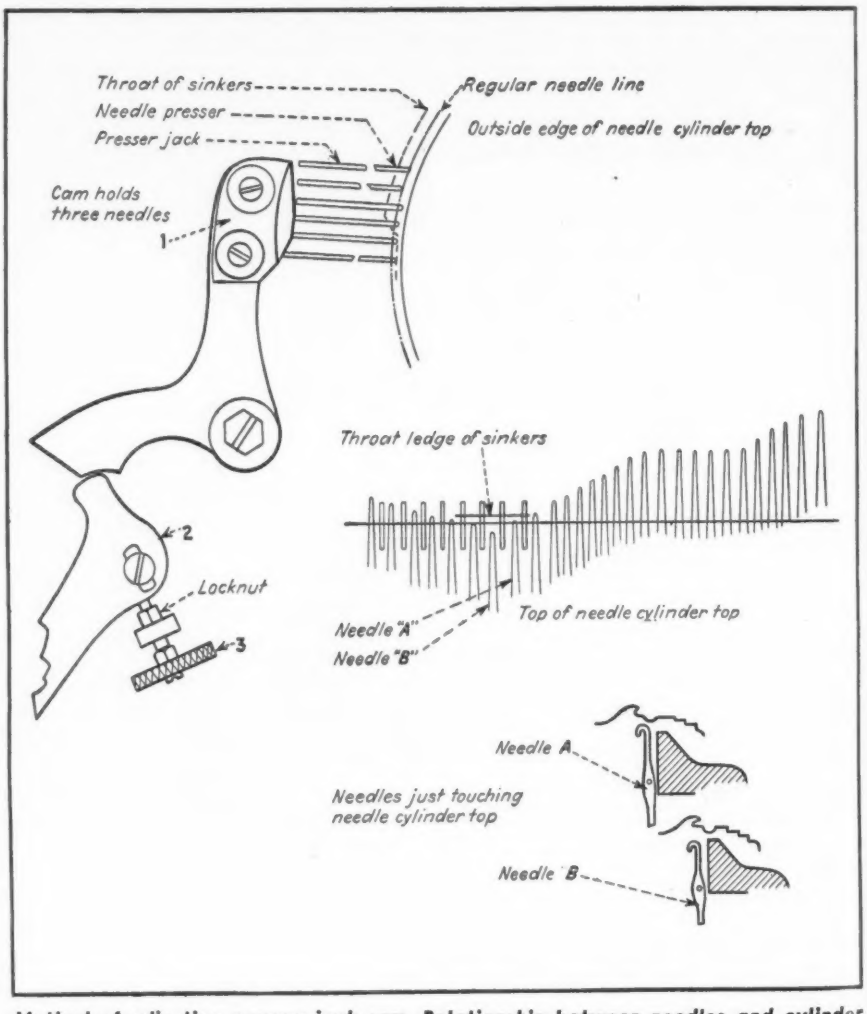
SUCCESSFUL NEEDLE-REVERSE PLATING depends on the resiliency of the needles, the position and condition of the cam face of the presser jack cam, and the movement of the presser cam levers. All these factors are influenced, to a limited extent, by thumbscrew adjustment 3, Fig. C55, which controls the backward movement of the jack-cam lever.

The repeated deflecting of the needle-stem during reverse plating will, in time, reduce its resiliency. When this happens, the needles that have lost their ability to assume their normal position will fail to snap back and likely cause reverse plating when such action is not required. When such a condition exists, remove the old needles and replace with new ones with normal resiliency. Sometimes this action may continue for a few minutes before the knitter locates the distorted plating. To prevent bad plating and give the fixer a chance to replace the "dead" needles, the sinkers, and sinker cams on the NRP-Model have been modified to correct for such plating inaccuracies. The latest machines of this model are equipped with sinkers and sinker cams that tend to overcome bad plating of this nature. The fixer can remove the "dead" needles at regular intervals.

The useful life of the deflection needles partially depends on the amount of pressure applied to the presser jacks by the presser jack cam *1*, Fig. C55. The position of the presser jack cam, for best results, should be such that when it deflects the jacks the needles will be flexed inward just enough to barely touch the top of the cylinder, as shown by the position of the needles *A* and *B*. The broken line shown on the outside edge of the needle cylinder top, in Fig. C55, and marked "Regular Needle Line," indicates the path taken by the needles that are not selected to reverse plate.

Care of the presser jack cam *1* should not be overlooked. It should be polished the same as the stitch cams. Although the cam is of high-quality metal and properly tempered to withstand wear, the face of the cam will, in time, become rough if not polished and smoothed from time to time. When the face is polished or burnished, the entire face should be refinished. If the burnishing is concentrated at a rough spot on the cam, it will tend to distort the contour of the face and, sooner or later causes presser trouble.

To off-set normal wear of the presser jack cam, and to obtain the proper pressure for the most efficient needle flexing, the movement of cam lever 2 is regulated by an adjustable thumbscrew 3. The position of the thumbscrew 3 limits the backward movement of the cam lever *1* when it is thrown into action. This adjustment is made when the machine is reverse plating. When the position of the cam lever 2 is such that an adjustment of the thumbscrew 3 deflects the needles, as previously described, the locknut should be tightened so as to maintain in correct adjustment the cam lever.



Method of adjusting presser jack-cam. Relationship between needles and cylinder top are shown, and position taken by the needles under the jack-cam indicated.

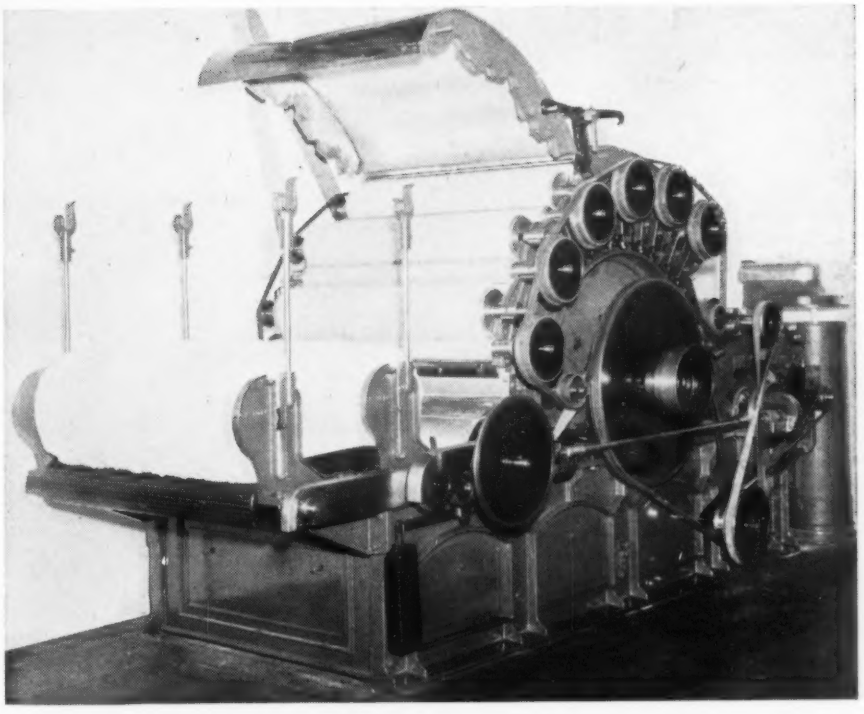
Roller-Type Card for Staple Rayon

A roller-type card which handles staple rayon of different lengths, especially staple over 2 in. long and of various deniers, has been designed by Whitin Machine Works, Whitinsville, Mass. The regular Whitin cotton card chassis is used, permitting mills to convert their present 40 in. flat-top cards to a roller-top type.

With the exception of three major changes, the new machine remains substantially the regular cotton card. First, a double lap feed is employed. This arrangement reduces the variations in lap regularity and also, because of the slower speed of the feed rolls, improves the action of the lickerin. Second, a set of six workers and strippers are substituted for the regular flats. By this means, thorough carding is obtained so that any type of blend will be properly opened and prepared with a minimum amount of damage and loss. And third, a two-coiler front is provided so that with a normal-weight sliver, an hourly production of about 25 lb. is obtained.

Other minor changes include an improved worker bonnet that controls the air currents and prevents fiber from loading at the roll bearings. Very little free sliver can blow out at the sides to cause either loss or trouble.

Under normal working conditions not more than 0.75% of fiber will be lost as waste during the carding process. Since workers and strippers are not selective, as are the regular flats, no change in percentage of mix takes place while carding. This is an important feature, especially when blends containing wool are employed.



Roller-type card for handling long-staple rayon (Whitin)

Detachable Sheaves

Quick and easy detaching and changing of sheaves to different sizes are features of Pyott Sheaves, produced by Pyott Foundry and Machine Co., 328 N. Sangamon St., Chicago. A socket wrench is the only tool required for making sheave changes. A tapered split hub is first keyed and setscrewed to the shaft. The sheave is then attached to the hub with pull-up bolts. The sheave and hub may be removed and replaced on a shaft a great many times without injury to the various parts and with the loss of very little time and effort.

Magnet for Removing Metal from Textile Fibers

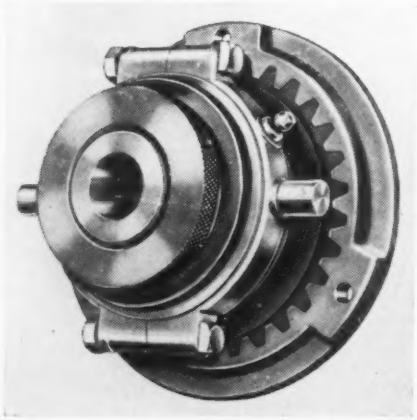
Permanent magnets for removing from cotton and other fibers small pieces of metal often baled with the fibers, have been produced by Besco Co., Hill St., Rochdale, Eng. These magnets may be applied to any textile processing machine, but are especially efficient when attached to pieces of opening equipment.

The magnets are about 6 in. long, 3½ in. wide and 2½ in. deep and may be attached together to fit any width of machine. Metal particles, mixed with fiber passing beneath the magnets, are drawn to them, thus preventing their passage into the machine. Such particles when struck by the beater blades or other revolving metal parts of opening equipment cause sparks which frequently start fires. These magnets are made from highly magnetic alloys and are permanent in nature, hence requiring no electrical current.

Polarizer Stops Boiler Scale Formation

Boiler scale, pitting and corrosion may be reduced without the necessity of water treatment by using a Polarizer, developed by Chemical Solvent Co., Birmingham, Ala. Consisting of a simple electrochemical cell of dissimilar metals in contact with the boiler shell and operating on electrostatic action and the repulsion principle, scale forming matter in boiler water is precipitated. The precipitate collects in the bottom of the boiler and should be blown-out about every four hours. The unit is supported by means of hooks to staybolts in hori-

FRICTION CLUTCH FOR SMALL POWER REQUIREMENTS



Rolling-grip friction clutches available in two sizes, namely with a 3½ in. dia. disc and rated at ½ hp at 100 rpm, and with a 4½ in. dia. disc and rated at 1 hp at 100 rpm, have been announced by Dodge Mfg. Corp., Mishawaka, Ind. These clutches use steel balls which are forced into a "V"-shaped groove instead of toggles.

zontal return tubular boilers and is swung on bars or braces in drums of water-tube boilers.

Action of the Polarizer depends on the difference in electrical properties between 98% copper and a special metal alloy which is slowly soluble in both acid and alkaline water. The special metal will neutralize water as it dissolves, thus preventing foaming, or caustic embrittlement and keeps boiler water chemically neutral. Use of this unit eliminates necessity of employing boiler compounds.

Cleaning of the Polarizer is unnecessary as it is self cleaning and it requires only occasional inspection at the time of regular boiler inspection. When replacement of the special metal is necessary the end of the unit is unscrewed and the old metal inserts pushed out from either end. New inserts are tapped into the frame and the end screwed back into place.

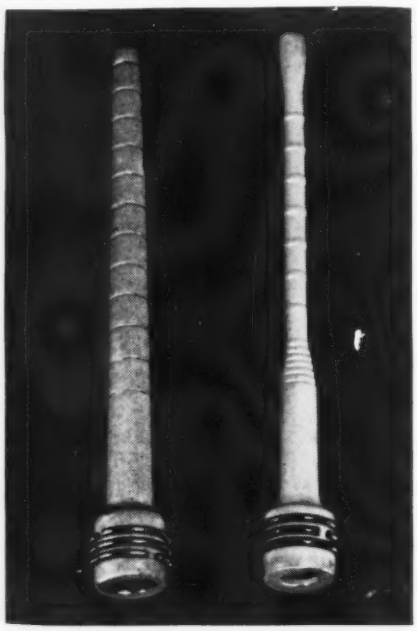
Sewing Machine Needle Cooler

A device for cooling needles on high-speed industrial sewing machines seaming heavy fabrics and consequently reducing thread breakage, has been developed by Union Special Machine Co., 400 North Franklin St., Chicago 10. This device consists of a blower attached to the electric motor drive of the sewing machine and a tube to carry the air to the vicinity of the needle. Records from a number of needle trades plants in which these units have been installed show that the unit has eliminated thread burning and breakage due to overheated needles, has greatly increased needle life, permitted higher operating speeds and contributed toward substantial production increases.

Solid Core Bobbin

A bobbin having tip and bottom the same shape and size of a conventional bobbin, but having a solid core about the diameter of a pencil, has made possible an increase of 25% in yarn capacity per bobbin. Developed in the Blanket Division of the Biddeford plant, this bobbin has been patented and made available for use by other mills by the Pepperell Manufacturing Co., 160 State St., Boston.

The use of this type of bobbin for rewinding, it is said, offers a very material saving in winding costs, feeler waste, battery waste, in imperfections caused by transfer and permits operation on a reduced number of bobbins. Successful operation with this bobbin has been obtained on Hacoba winders and on Whitin-Schweiter winders. When using spinning frames and no rewinding, additional yarn savings are obtained over those normally found when using this solid core bobbin for rewinding. It has been found that a solid core bobbin, when properly made, will not warp or distort. These bobbins are available for use by textile mills under a licensing agreement which has been made with bobbin manufacturers.



Conventional bobbin is shown at the left, while the solid core bobbin is illustrated to the right (Pepperell)

Electronic Pneumatic Controller

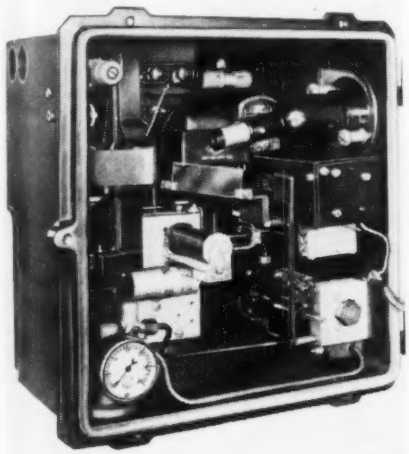
Announcement of a pneumatic indicating controller which does not employ a motor or other continuously moving parts, but is operated electronically, has been made by C. J. Tagliabue Mfg. Co., 550 Park Ave., Brooklyn 5.

The Celectray pneumatic controller consists of a mirror galvanometer and photoelectric amplifier that is combined with a pneumatic control consisting of a magnetic air-valve which acts as an amplifier and converter from electric to pneumatic action. Arrangement is provided for controlling the sensitivity of control and for having

Cooler for reducing thread breakage (Union Special)

open and shut throttling or operation.

The light beam "follow-up" flag is moved back and forth by changes of the air pressure in the bellows of the "follow-up" assembly unless the sensitivity-adjusting arm is turned to the highest sensitivity on its scale. With this adjustment, the throttling range is zero, the flag stands still as the control pressure varies and the controller acts as an on-and-off or open-and-shut controller, opening or closing the valve to its limits for small changes in temperature. If the sensitivity is lowered by moving the arm to a lower value on the scale, then the flag will follow the light beam as it moves back and forth with changes of temperature. The flag will follow to the limits of the throttling zone as determined by the position of the arm.



Electronic pneumatic controller (Tagliabue)

Useful Accessories for Textile Mills

An oil and grease absorbent, known as Speedi-Dri, a product of Refiners Lubricating Co., 601 W. 26th St., New York, is being offered to absorb oil and grease from wood, concrete, and steel floors. This product is noncombustible and will not readily burn even when oil-soaked.

Belting made with the new GR-S synthetic rubber can be joined to natural rubber belting with a vulcanized splice, it is announced by The B. F. Goodrich Company. This make it possible to repair existing belting when needed.

A flowmeter for measuring the flow of practically any liquid or gas is being offered by Schutte & Koerting Co., 1161 Thompson St., Philadelphia, 22. Water capacities range from 19 c.c. per min. to 38 g.p.m. and air capacities from 0.01 to 80 c.f.m.

Mill Maintenance TO KEEP 'EM RUNNING

Speeding Armature Repairs

Repair periods may be cut by one half to one third the time normally required if radiant heat is used for drying armatures, according to Westinghouse Electric & Mfg. Co.

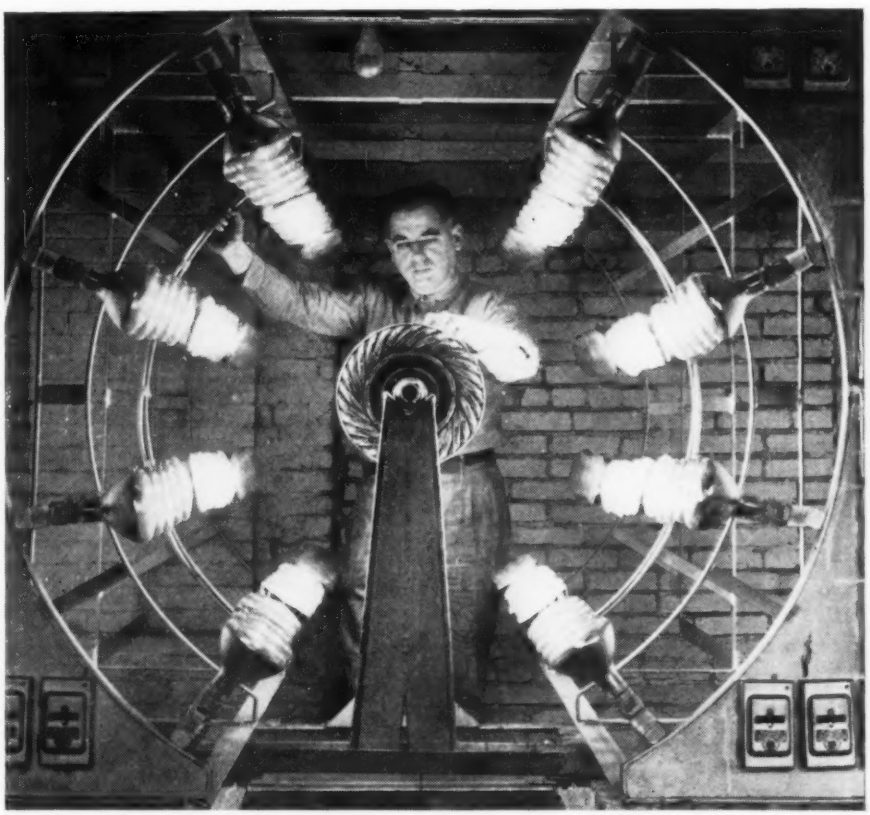
Mills making their own electric motor repairs will find the use of radiant heat for drying insulating varnish on rewound armatures will cut materially the time that a motor so repaired is normally unproductive. Infra-red lamps of 250 watt and 120 in number are used. An 18-in. armature requiring 30 hr. in the convection oven, but is baked in 8 hr. under infra-red, while a small 6-in. armature requires less than half this time to bake out.

First cost and installation time is reduced when employing infra-red by using the original brick oven. The old doors are removed, the roof ventilated, and two banks of lamps suspended on barn-door hangers, as illustrated. Each bank of 60 lamps consists of four rows mounted in a semi-circle, with a 27-in. radius. The barn door hangers permit moving the banks so the lamps may be placed the proper distance from the armature surface irrespective of its diameter.

Each group of five lamps is controlled by a 20 ampere safety switch; 24 such switches provide maximum flexibility of control. The lamps are in three groups of five, 15-in. apart, to bake out three armatures simultaneously. The power supply is single phase, three-wire and the total load is 30 kw.

How to Align Shafting and Pulleys

Belting cannot give service if the pulleys or shafting are out of alignment, according to an article appearing



Westinghouse Electric & Mfg. Co.

Armature baking time is reduced using radiant heat lamps in place of convection oven. Such a device may be constructed by mill maintenance men.

in a booklet entitled "Leather Belting Conservation," published by Baldwin Belting & Leather Co. Indications of misalignment are belt running off the pulley at one side and rubbing or climbing on flanged or step-cone pulleys. A simple test to determine whether the fault is the alignment or a crooked belt, is to turn the belt inside out or end for end. If it still runs to the same side of the pulley as before the fault is in the alignment.

It is important to check drive alignment at least once a year. In multiple story buildings, shifting of loads on

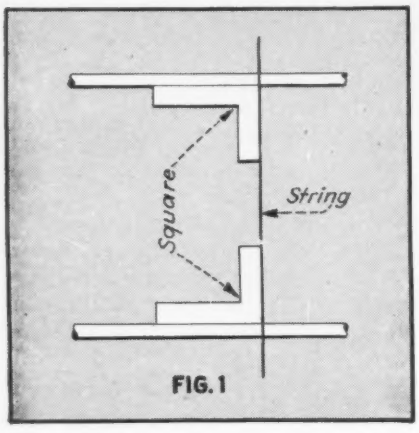


Fig. 1. Method of determining alignment if shafts are parallel.

floor above shafting may cause it to be distorted or to be thrown out of alignment. Some common faults in drive alignment are:

1. Shafting carrying driving and driven pulleys may not be parallel.
2. Shafting may be sprung out of line. (Hangers should always be located near the pulleys, the points of maximum load.)

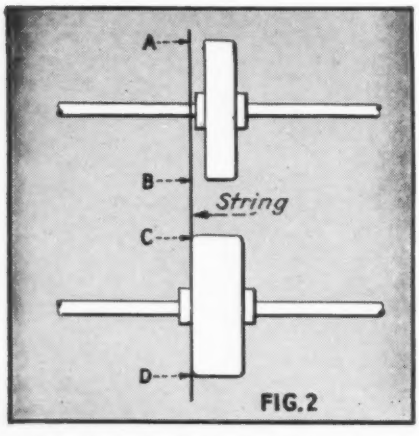


Fig. 2. Checking alignment of pulley, using a string.

3. Driving and driven pulleys may be offset.
4. Pulley may be eccentric with shafting.

An easy method of aligning pulleys and shafting is shown in Figs. 1 and 2. Procedure:

1. Check shafts with a level.
2. Determine if shafts are parallel by placing taut string between shafts and check with large square, Fig. 1.
3. Check alignment of pulleys using string along their edges, as illustrated in Fig. 2. If pulleys are same width, string should touch lightly at four points: A, B, C, and D. If pulleys are of different widths, distance from string to pulley at points A and B should be the same. If possible give pulley half turn and recheck.

DYES & CHEMICALS — PRODUCTS & PROCESSES

Water Repellent for Rayon Fabrics

Development of a new water repellent for specific use on acetate, viscose, and cuprammonium rayon fabrics, has been announced by L. Sonneborn Sons, Inc., 88 Lexington Ave., New York. The new compound, known as Textarid 918 is designed to produce a 100% spray rating on fabrics, such as acetate rayon taffeta, which are normally difficult to process satisfactorily with water-repellents. Textarid 918 is easily applied, and is said to impart a soft, full, mellow hand, without impairing the tensile strength of the fabric.

Solvent for Dyes

For pasting basic, acid, and vat dyes, Carbide & Carbon Chemicals Corp., 30 East 42nd St., New York, has announced a new solvent, known as Kromfax Solvent. This new solvent is a non-volatile, hygroscopic, practically colorless, liquid which is neutral in reaction and completely soluble in water. It can be employed to replace in part or whole glycerine and other chemicals ordinarily employed for pasting the classes of dyes mentioned above. Kromfax Solvent is said to be particularly suitable for pasting difficulty soluble basic dyes, for direct, discharge, or resist printing. This solvent can be employed also in pasting Rapidogen, Indigosol, and alizarine dyes; for pasting direct and acid colors for printing wool or silk; and for cleaning printing rolls on which dye pastes have become laked and precipitated in the pattern. An advantage cited for Kromfax Solvent is that higher color values are obtained than with the usual solvents. Chemically, the new solvent is thiodiglycol, or, more exactly, B. B′ dihydroxyethyl sulphide. Since hydrochloric acid and compounds which generate hydrochloric acid convert Kromfax Solvent into products that are dangerous to health, these compounds should not be used with the solvent.

Stabilizing Agent for Fiber Lubricants

A new type of compound which has a number of potential applications in the textile industry has been announced recently by American Cholesterol Products, Inc., Milltown, N. J. This compound, known as Amerchol S, is a blend of cholesterol and other sterols. It is a semi-solid, non-volatile oil, completely soluble in most animal, vegetable, and mineral oils. It is insoluble in water, but emulsifies readily and forms stable water-in-oil emulsions which are neutral in reaction.

One application for Amerchol S is as an addition to spraying, coning, and other oils used a fiber or yarn lubricants. A small percentage of the new compound is said to lower the interfacial tension to produce efficient wetting, spreading, and penetration; and to increase the stability of the lubricant, allowing it to be removed easily and completely. Amerchol S is unsaponifiable and will not undergo polymerization. It is stated that it will not develop rancidity nor change in color.

Other applications for sterols include their use as kier boiling and dyeing assistants, and in finishing.

Chemically, sterols are polycyclic, secondary alcohols. Until recently the sterols have been relatively scarce and high in price. Now, however, they are being produced commercially on a large scale. Amerchol S is believed to be the first compound of the sterol class to be introduced.

Keeping a weave shed at tip-top efficiency involves many details. Breakdowns like these slow down production and cost you money!

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. . . Frazzled, split loom beam barrels.
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. . . Loose-fitting beam locks.

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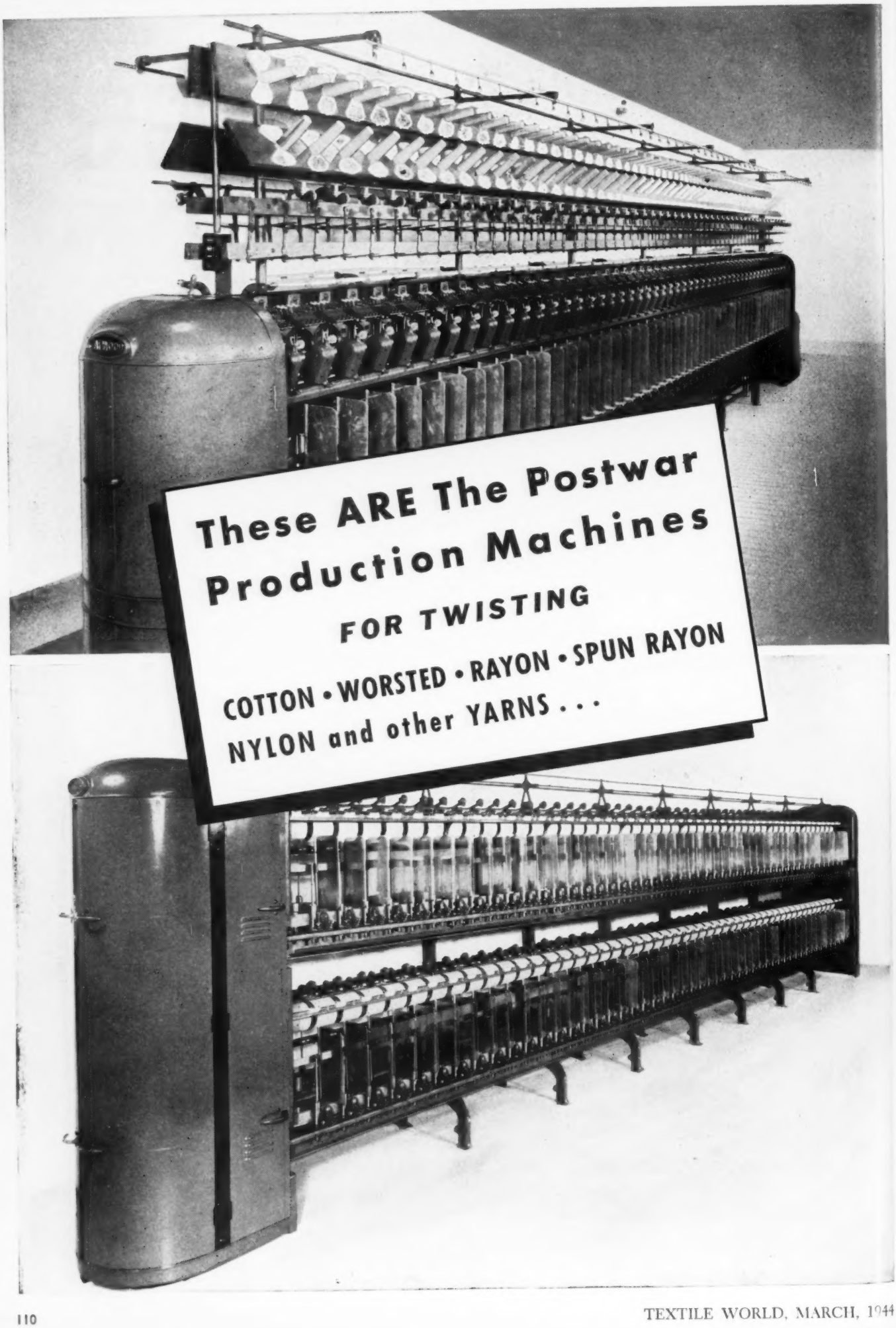
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The ATWOOD Model 110 UP TWISTER represents a logical and successful evolution from a line of Atwood Twisters that has been accepted for close to a century as the standard for high grade yarn production. It turns out large, precisely twisted packages, bobbin or headless, up to two pounds. The quality, dependability and economy of its performance is already demonstrated and established on *your* types and weights of yarns.

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Kinks AND SHORT-CUTS

A $25 WAR BOND FOR YOUR IDEA

A $25 War Bond will be awarded each month for the most useful "kink" published in this department. This contest is open to all readers of TEXTILE WORLD, and there is no limit to the number of entries any one person may make.

Contributions must be received not later than the last day of the month to be eligible for the award for the second succeeding month. Items may pertain to production methods, mill engineering, safety, cutting costs, improving quality, speeding up production; in brief, any little device, stunt, kink, or short-cut which you have tried out in your own mill and which you believe will be helpful to other mill men. Items should contain sufficient detail to permit other mill men to utilize the ideas in their own operations. Previously published material is not eligible for the award. Judges of the contest are the editors of TEXTILE WORLD.

TEXTILE WORLD shall have the right to publish any item submitted. Items which are published will be paid for at our regular rate for this type of matter with extra payment for appropriate sketches or photographs. The sketch you submit need not be a finished drawing.

In writing to this department, give your real name and address as evidence of good faith and to permit payment for items accepted. Your identity will not be published unless you give permission.

Contributions should be addressed to: Technical Editor, TEXTILE WORLD, 330 West 42nd St., New York 18, N. Y.

★ **THIS MONTH'S PRIZE WINNER**

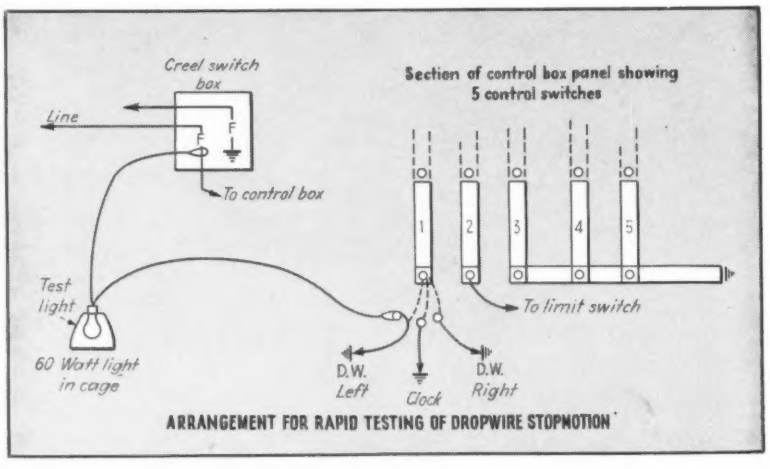
Testing Barber-Colman Dropwires on Warpers

The usual method of testing the dropwires on a Barber-Colman super-speed warper is to wait until the warper is running and pick out a wire at random and pull it back to see if it will stop the warper. Then the machine is restarted and another wire pulled back. It would be almost impossible to check all the dropwires in this manner, and even to check one wire on each row (which should be the minimum tested) would cause a great deal of unnecessary wear on the clutch and brakes. Also, this method does not give a true picture of the warper in operation, because the tester pulls the wire back whereas, in actual operation, the wire must fall back of its own weight. A wire could be bent, tight, or have a small amount of lint on the contact, and if it was pulled back it would work; but if the thread broke it would not work.

The next best method of testing dropwires is to reach in the creel, to break an end at the cheese while warper is running, and then to see if the wire will fall back and stop the warper. If this does not actuate the stop motion, the end is usually buried before the warper can be stopped manually. Both these methods are very unsatisfactory.

By using the "test light" method of checking, each wire of

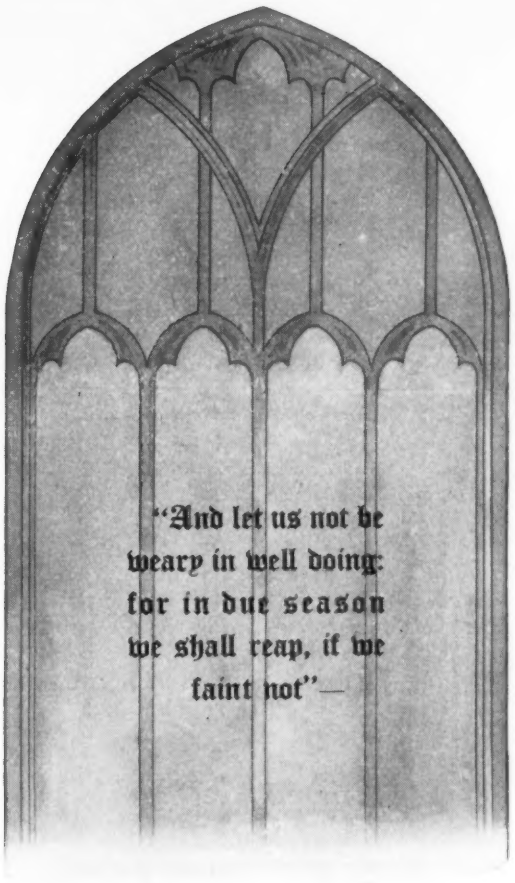
(*Continued on page 114*)



Arrangement for rapid testing of dropwire stop motion.

Worn Bearings Cut To Adjust for Wear

Often, when the feed rolls at the back of a cotton card wear down at the bearings, the rollers are built up by welding. This usually takes several hours. A simpler way, which takes only about 5 min., is to take the roller bearing out and cut it in two. The thickness of the saw blade generally takes all the play out of the bearing. Be sure to cut the bearing across instead of up and down. When the machine is back in operation the cuts are on the sides where there is relatively little wear. (*K-135*)



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Our job is far, far from being accomplished.

Even if the war in Europe is over before this is printed, we will still be a long way from the things we started out to win.

Our job of "well doing" must go on and on. We can't live on our war record after this war—and the post-war period is going to last a long time.

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KINKS & SHORT-CUTS

(*Continued from page 112*)

Testing Dropwires — This Month's Prize-Winner

(*Continued from page 112*)

the creel can be tested positively, in less than 45 min. The clutch, brakes, and other mechanisms of the warper are not used at all in this method of testing. It is based on the principle that if the dropwire will make a light bulb burn, it will stop the warper.

For this testing method the only materials necessary are a 60-watt light, a standard light socket (preferably one without a switch), a wire cage to guard the light against breakage, 6 ft. of ordinary drop cord, and two clips to fasten test light to switch and creel.

The wires are tested between creel changes so that no threads are in them. The testing procedure is as follows: First, disconnect the three green wires that are fastened to control switch No. 1 in the control box. One of these wires goes to right side of the creel, one to the left side of the creel and the third to the clock. Clamp one end of the test light cord to the wire leading to the side of the creel to be tested. Be sure that bare wires and clips do not touch metal or the circuit will be grounded. Next clamp the other end of the test-light cord to the hot phase in the creel switch box. Do not pull this switch. The test light should now be on. Then turn down each dropwire on the side to be tested, to the inoperative position. When every wire is down, the light should go out.

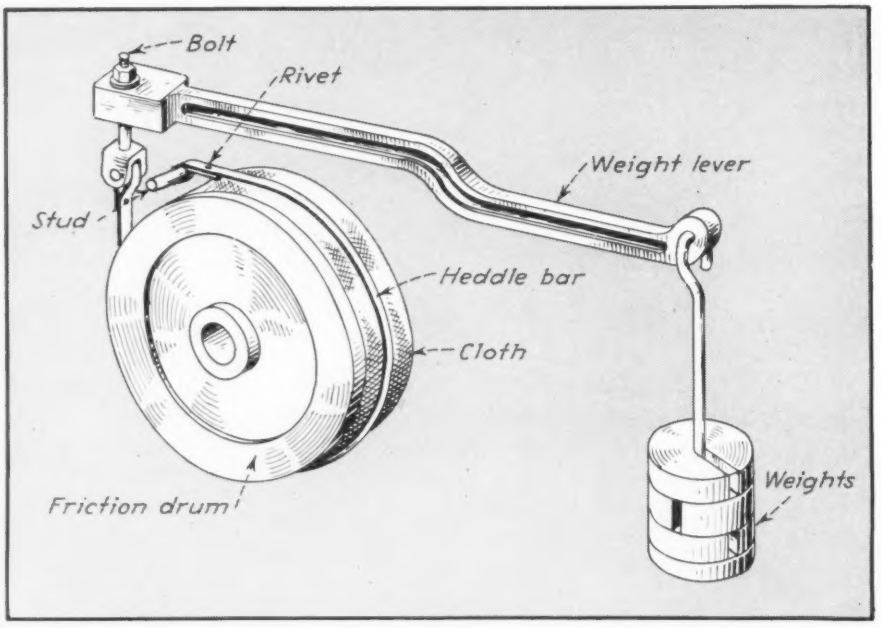
To get an accurate test, the warper must be in the running position, electrically. To do this, press the starter lever just as if starting the warper, but do not have the drum drive motor running. Since the drum is not running, the limit switch will not work, so in order to put the control bars in running position, take a screwdriver and ground control switch No. 2. This pulls up the loading lever and the wires are now ready to be tested. All this sounds like a lot of work, but it takes only about 3 min. To test, turn up one wire at a time and hold it in the running position, then let the dropwire fall back. If it is operative, the test light will come on. Do not pull the wire back, if it does not fall back itself, it must be corrected.—Truman Coxe, **Pelzer, S. C.**

Loom Friction for Light Woolen Work

Woolens woven of fine yarn require light-pick work. Often trouble appears in weaving because the regular friction-band letoff is too heavy. This condition generally results in filling streaks and light places appearing in the fabric when the loom stops and occasionally with the loom running.

This trouble may be overcome by removing the regular friction band from the loom beam and substituting a heddle bar bent to the same shape as the regular friction band. Each end of the heddle bar is bent, looped, and riveted, in order to mount it. One end is bolted to the weight lever with a bolt 2 in. long; the other end hooks onto the stud attached to the loom framework, the same as does an ordinary band. The heddle bar then encircles the friction drum the same as a regular brake-band.

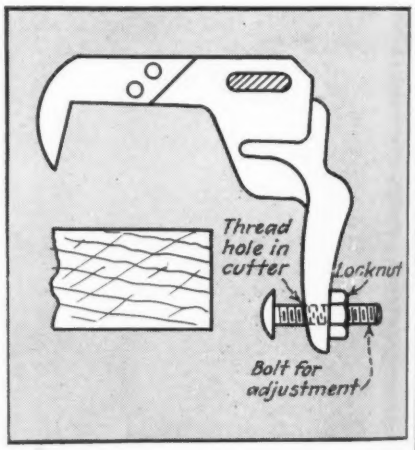
Cloth is placed beneath the heddle bar so it forms the friction surface with the drum. This cloth should always contain graphite. The regular weight arm and weight hanger are placed in position as before. This arrangement gives a light even drag on the beam friction head, and no further trouble should be experienced with uneven letoff on light woolen fabrics. (K-88)



Friction let-off for weaving lightweight woolen fabrics.

Adjustment Bolt for Temple Thread Cutter

At times it is necessary to use temples which were not designed for the particular loom on which they are installed. Usually no trouble is experienced with the temple opposite the magazine, as it can be adjusted for most types of looms. On the magazine side, however, a thread-cutting



Thread cutter for loom temple.

temple is used, and any variation in the width of the raceplate may cause the thread cutter to work improperly. If the thread cutter is not moved back far enough by the movement of the lay, the ends from the bobbins that are changed by the magazine, will not be cut until the fabric has woven some distance. In some cases, the ends may break before they are cut, and may be carried into the fabric.

A common practice is to tack strips of leather on the raceplate under the arm of the thread cutter, so as to cause the ends to be cut as soon as the loom weaves only a few picks after transferring. A great deal of trouble may be

(*Continued on page 116*)

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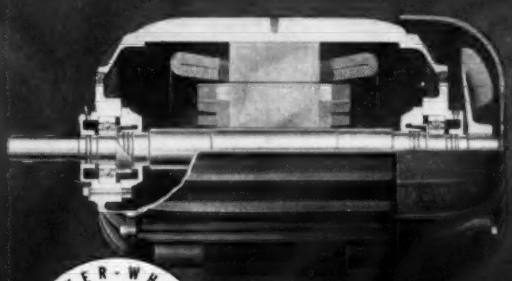

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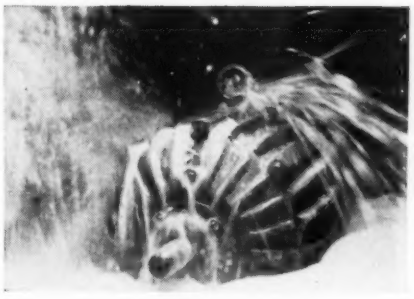

1 **SEALEDPOWER** motor was placed in tank containing several inches of water and run continuously for 8 hours (see photo). It stood idle in water overnight, then was run 8 more hours. During motor's operation, the external ventilating fan drenched the outside of the frame with water. At end of test, the motor was disassembled and found to be *completely dry* inside.

2 A dense atmosphere of extremely fine French chalk was kept circulating around the motor and through its ventilating system for many hours. No trace of chalk was found inside upon disassembly.

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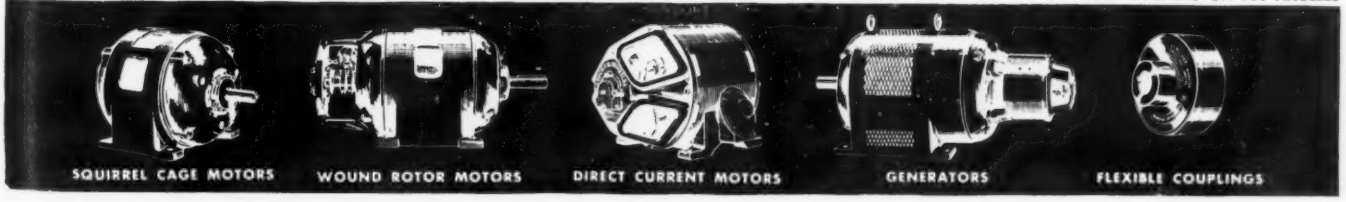


caused by this practice, as the filling may catch on either the tacks or any rough spots on the leather, and cause the loom to knock off.

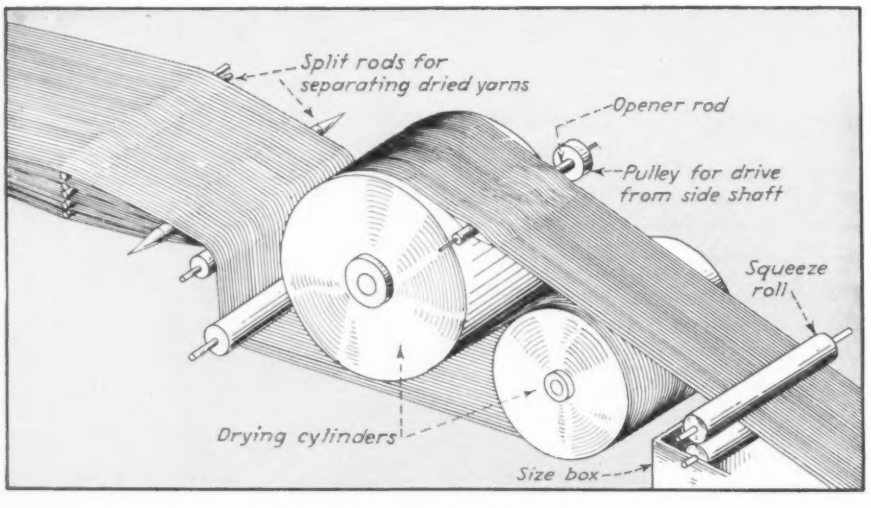
A permanent way to overcome this trouble is to remove the thread cutter, and to drill and tap the lower end for a ¼-in. carriage bolt. Insert the bolt so that the round head will come in contact with the lay. Then, to set the thread cutter, simply bring the lay to front center and adjust the bolt so that the blade of the thread cutter is completely closed. Finally, tighten the lock nut to hold the adjustment. Different types of fabrics may require the ends of filling to be cut earlier or later. This can be accomplished by running the bolt in or out of the thread cutter. (*K-65*)

Opener Rod Improves Smoothness of Warps

When slashing cotton or spun rayon yarns, the squeeze rolls not only press off the surplus size (and perhaps force some of it into the yarn), but also they tend to mat the threads together. The threads are then dried in sheet form over the drying cans and have to be torn apart by the split or opener rods on the slasher front. This leaves the yarn in a relatively rough condition which encourages shedding.

The accompanying illustration shows an inexpensive device for improving this condition. It consists of a length of brass tubing about an inch or so in diameter that splits the yarn after it leaves the squeeze rolls. The rod can be placed at about the center of the mass and will, to a certain extent, break up the matted condition. Then when the dried yarn reaches the front of the machine, it will separate more easily, thus leaving the yarn in a smoother condition.

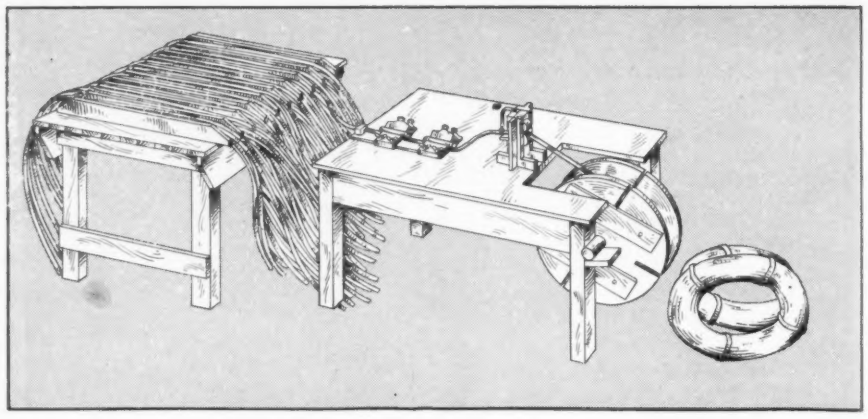
The rod should be revolved so that it does not accumulate size. It can be driven from the side shaft and can be mounted in bearings attached to the slasher hood or from stands attached to the frame proper. It is recommended that the rod be placed as close as possible to the drying cylinder. Once in place, it should require no further attention other than occasional lubrication. This kink will show up best on heavy sizing. (*K-08*)



Split rod for smoother warps.

Salvaging Steel Strap For Additional Use

For some time, steel strapping has been a critical item of supply, however, many vendors use strapping which can be salvaged for reuse. Departments which receive strapped packages can remove the strapping and send it to a salvage area. There defects in the strapping can be straightened out or cut off and the pieces sorted and accumulated as to width, for joining and coiling. The apparatus for joining and coiling can be seen in the accompanying illustration. It comprises a table on which is mounted a clamping device, adjustable to take various widths of strapping, tension guide rolls, and a hand-operated roll-up mechanism. The illustration also shows the sorting table and completed coils.



Apparatus for salvaging steel strap.

When a quantity of strapping has been accumulated, one piece is started through the guide rolls and attached to the coil roll-up. The other end is placed under the clamping device, and over it is placed a free end of the next piece. Both pieces are then joined by means of the usual clip and the piece is rolled onto the coil-up to the point where the free end reaches the clamp. Here another piece is jointed by means of another clip and the additional length rolled. This is continued as long as the supply lasts.

When full, the roll-up reel is dismounted, and the coiled strapping is removed and stored for use in the normal way. This apparatus makes usable all salvaged strapping in a convenient, handy put-up. (*K-147*)

Safe Way to Cut Rubber from Rolls

The rubber from covers of worn-out temple rolls can be salvaged by use of the safe cutting tool shown in the illustration.

It is dangerous to try to cut the rubber off with a knife even though the roll is held in a vice. The device shown can be made by cutting two 6-in. lengths from a discarded picker stick. The edges are curved as shown, to take a roller lengthwise, and the two pieces are fitted together. In the center between the two blocks, a razor blade is

(*Continued on page 118*)

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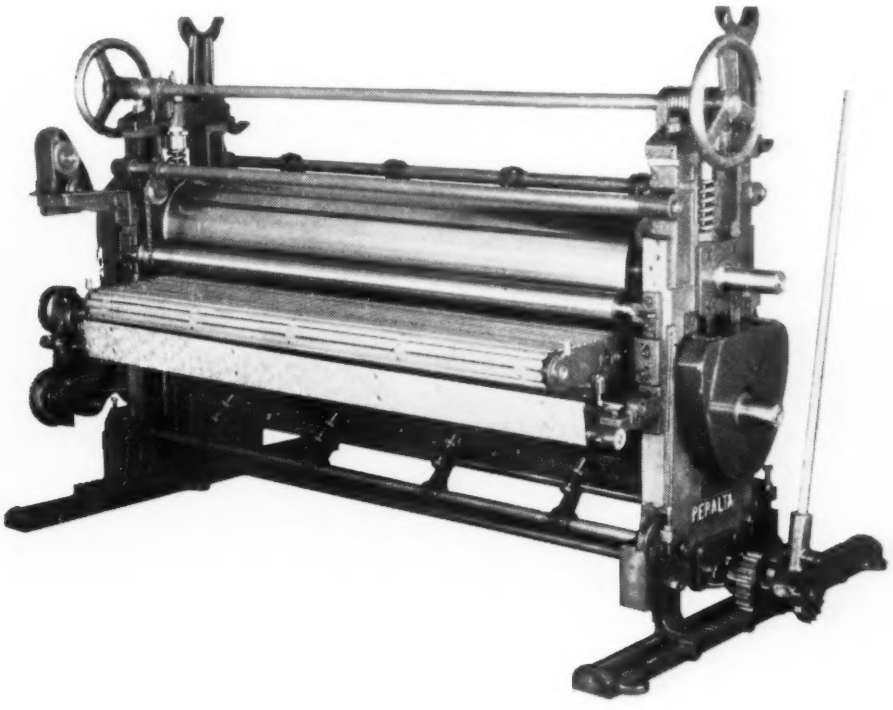

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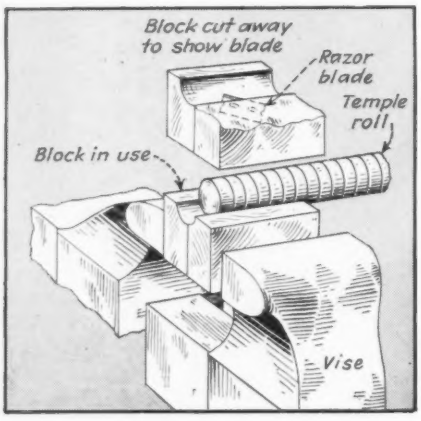
KINKS & SHORT-CUTS

(Continued from page 116)



Cutter for stripping temple rolls.

placed so just one corner protrudes from the wood. This sharp cutting edge should be just high enough to cut through the thickness of the rubber.

The cutter is best used in a vise. Two cuts are made on each roller, one cut on each side from end to end. The rubber is removed. (K-143)

Wrinkle Chaser Used to Keep Cloth Smooth

Gray rayon cloth may show bad creases or wrinkles which were caused on the loom. These wrinkles often will not come out in finishing and so the cloth must be degraded. Hard creases also may cause fuzzy warp streaks which show up very badly after the goods have been dyed. Some of these creases are caused when the cloth does not run straight on the cloth-roller. To overcome this a "wrinkle chaser" can be used. This is a piece of heavy Kraft paper partially rolled around the cloth-roll and fastened so that it will not wind into the roll. This heavy paper smooths out the cloth as it is taken up. (K-145)

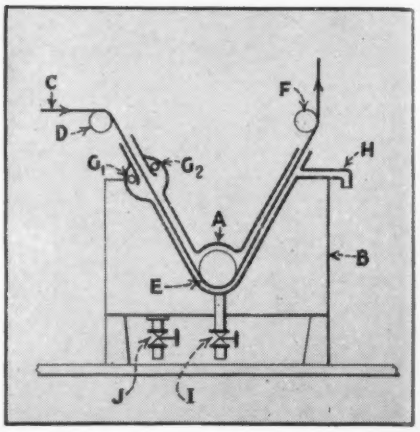
V-Trough for Developing Indigosol Colors

In dyeing Indigosol colors on a continuous, open-width machine, we ran into considerable trouble, due to the difficulty of keeping the developing bath at a uniform concentration. Our method was to run the goods through a solution of sulphuric acid in a regular 6-roll box which was part of the dyeing range. We found that the wet goods entering the developing box diluted the acid and that the nitrous acid formed in the sulphuric acid bath became more and more concentrated during the run of a lot of goods. These conditions resulted in tapering off of the shade, over-oxidization, and other faults.

A few months ago a friend of mine in England sent me a description of a V-shaped developing trough which he said had been used in that country for four or five years. We made a similar V-trough and put it in our acid box after removing the guide rolls and after boring a hole in the bottom to accommodate a drain pipe.

A side view of the trough is shown in the accompanying sketch. The V-trough is shown at A. It is made of stainless steel; is just wide enough to fit into the regular acid box *B*; and is closed on both ends. It holds approximately 2½ gal. The cloth, *C* travels over roll *D*, into the V-trough, under roll *E* (which is also stainless steel), up the second arm of the V-trough, along roll *F*, and then to a skying arrangement before it goes to the next box for rinsing.

Acid is fed into the V-trough through two perforated stainless-steel pipes G_1 and G_2. Flow of acid to the V-trough is so controlled that there always is a slight overflow at overflow pipe *H*. The V-trough is provided with a drain pipe and valve *I*. To maintain the developing bath at a uniform temperature, we keep the regular box *B* filled with water. Incidentally, for some dyes, the water is kept at 130° F.; and for others, at 190° F. Also the concentration of the acid bath is different for different dyes. The regular acid box which now contains water is provided with a drain pipe and valve, *J*. The V-trough is fastened to the box *B* to keep it in a fixed position, but in such a way that it can be removed if desired. (K-155)



Sketch of stainless steel V-trough used for developing Indigosol colors.

Handy Driving Tool For Odd-Type Screws

Many small screws and other parts cannot easily be held or used with a pair of pliers. For such odd shapes the tool illustrated in Fig. 1 has been designed. It is a type of gripper that can be made from a screwdriver or from any suitable rod mounted in a handle. For greatest usefulness it can be made from a ratchet-type driver.

To make the tool, flatten the tip and shape as shown—the offset is important to align the part held with the driving shaft. The clamp is made separately and is mounted to the base by means of a screw with a knurled or winged head. This tool is especially useful for driving parts such as are shown in Fig. 2. (K-59)

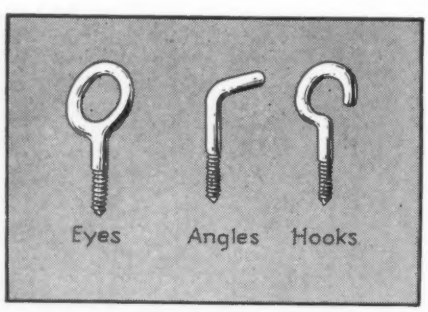


Fig. 2. Types of screws for use with gripper.

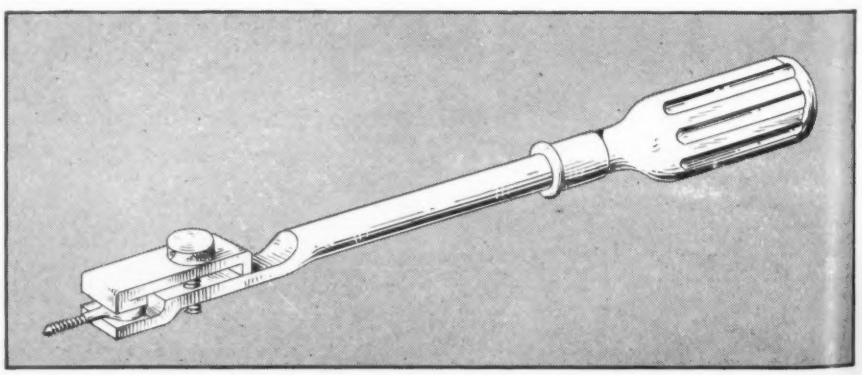
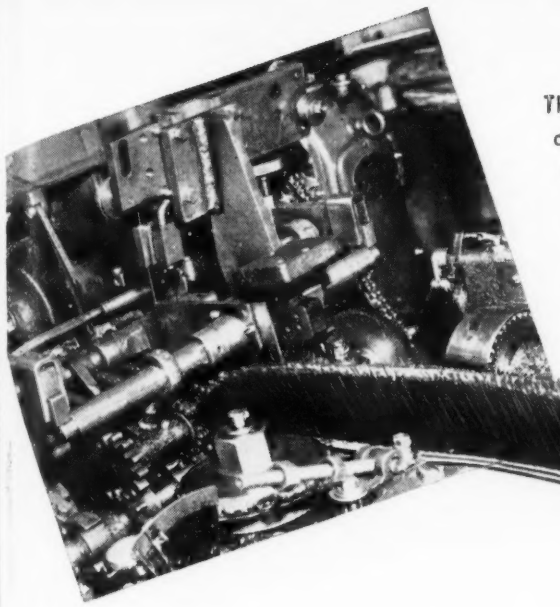


Fig. 1. Handy small-parts gripper.

FULLERGRIPT BRUSH STRIPS
are made on a machine like this..



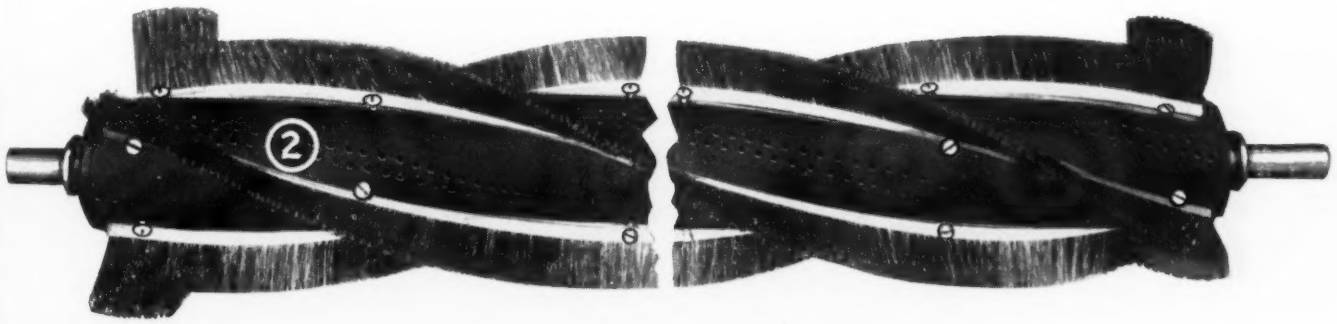
The brush material is centered over a ribbon of heavy-gauge metal and held in place by an anchoring wire and roll-formed into the finished shape as illustrated ①. Thus, as the bristles are doubled under the anchoring wire (hairpin style) and encased in metal under great pressure, permanency is assured.

FULLERGRIPT has a solid, continuous fill of material with no gaps or spaces between the bristles, resulting in much longer life and far better cleaning.

COTTON MILLS can re-brush their FLAT CARDS *with* FULLERGRIPT BRUSH STRIPS -

which are shipped pre-formed to the correct degree of spiral (right or left hand). Your own maintenance men can easily mount them to the old brush roll.

Over 6000 Cotton Card Machines
are equipped with our brush sets and are doing a better job of cleaning card clothing.



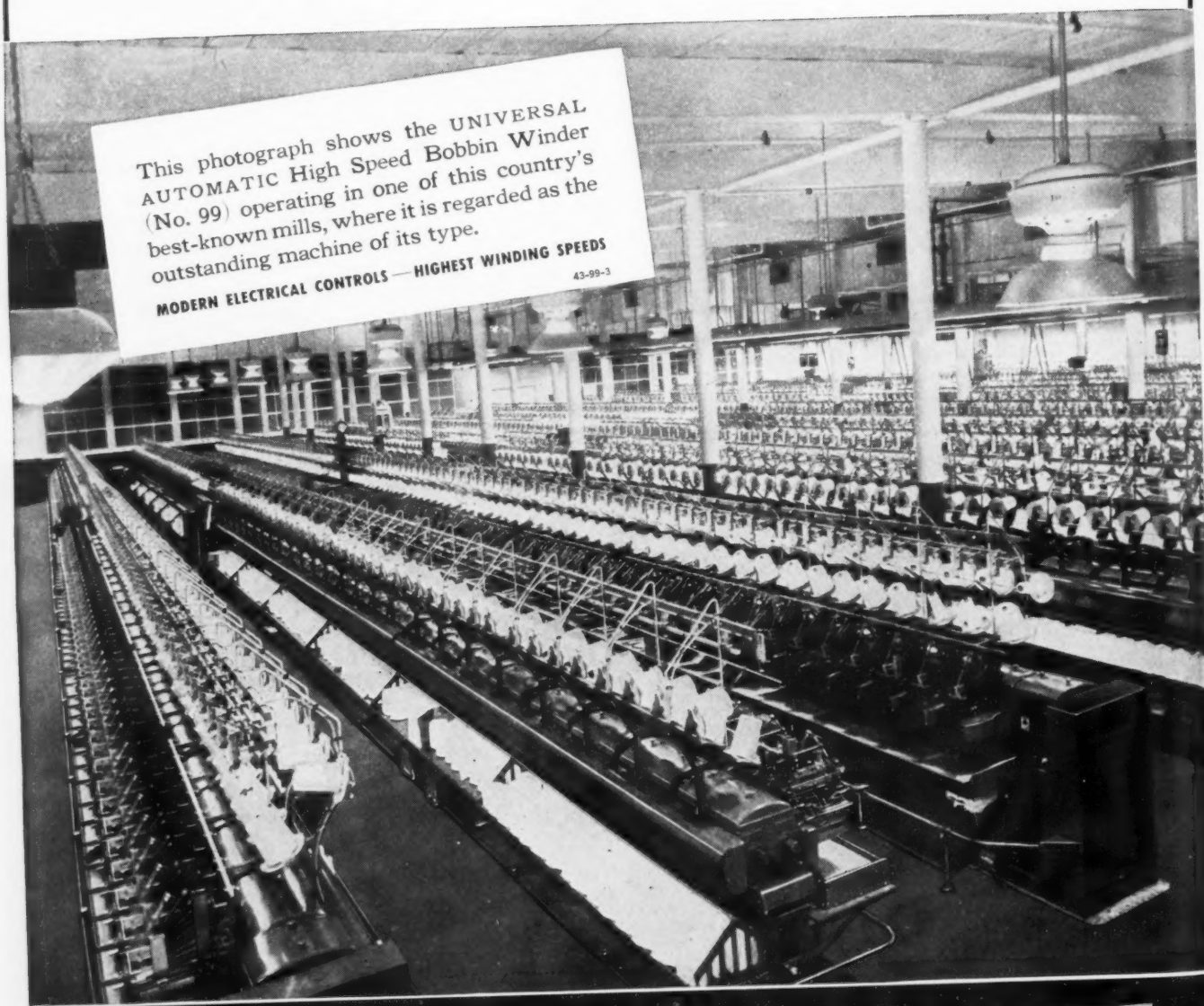
This is how your maintenance men renew your worn-out card brushes with FULLERGRIPT STRIPS

Put worn card brush roll in lathe centers. Trim off old tufts of bristles with a sharp knife. ② Sandpaper the roll. Apply two coats of black shellac. Drill screw holes on 8" centers and fasten the spiralled Fullergript Brush Strips with the special screws furnished with each set of strips.

EVERY WEEK **some** ***COTTON MILL*** **in the United States installs one or more sets of** ***FULLER FLAT CARD BRUSH STRIPS***

THE FULLER BRUSH COMPANY
INDUSTRIAL DIVISION, DEPT. 8C, 3594 MAIN ST., HARTFORD 2, CONN.

The Largest Installation of Automatic Filling Bobbin Winders in the United States


This photograph shows the UNIVERSAL AUTOMATIC High Speed Bobbin Winder (No. 99) operating in one of this country's best-known mills, where it is regarded as the outstanding machine of its type.
MODERN ELECTRICAL CONTROLS — HIGHEST WINDING SPEEDS
43-99-3

UNIVERSAL AUTOMATIC

HIGH SPEED BOBBIN WINDER

. . . Putting Electricity to Work to Improve Your Bobbin Winding

LEESONA

UNIVERSAL WINDING COMPANY

P. O. Box 1605 Providence 1, R. I.

Pete & Bill

USING HANDICAPPED WAR VETERANS

Is it feasible to train handicapped war veterans to run active textile jobs and maintain production at the normal high level; can the jobs be altered to fit the case, or should the handicapped be given inactive jobs?

I SEE THAT TOM JONES IS BACK FROM THE WAR AND THAT YOU HAVE HIM ON THAT BATTERY FILLING JOB. CAN HE KEEP THE JOB RUNNING AS WELL AS SOMEONE WHO HASN'T LOST A HAND?
YES, WE'RE REALLY GLAD TO HAVE TOM BACK WITH US AGAIN. HE'S OUR FIRST EXPERIENCE WITH A WAR CASUALTY IN THE MILL, BUT HE'S DETERMINED AND WE'RE LEARNING A LOT ABOUT HANDLING SUCH CASES.
1
LOOKS TO ME, PETE, AS IF HE'S GOT PLENTY OF SPIRIT, BUT WILL IT EVER PAY TO USE HANDICAPPED MEN ON SUCH JOBS WHEN IT TAKES EVERYTHING A WHOLE MAN CAN DO TO RUN ONE?
WE DON'T KNOW YET, BILL, BUT FRANKLY WE THINK WITH SOME MECHANICAL HELP WE CAN SOLVE TOM'S PROBLEM. HE CAN STILL MOVE ABOUT AS FAST AS EVER, AND AN ARTIFICIAL HAND PLUS TRAINING MAY YET DO THE TRICK.
2
WELL, I CAN'T SEE HOW YOU CAN USE MANY MEN THAT WAY. THEY WOULD BE O.K. ON WATCHING JOBS AND OTHER KINDS OF WORK NOT NEEDING FAST OR CONTINUOUS MOVEMENT, BUT ON HIGH-SPEED PRODUCTION, NO!
BILL, I BELIEVE YOU ARE WRONG IN MAKING A BROAD STATEMENT LIKE THAT. WE ARE GOING TO HAVE TO TAKE MANY MEN WITH SERIOUS HANDICAPS AND STUDY EACH CASE INDIVIDUALLY, WITH THE IDEA OF ADAPTING THE MAN AND THE JOB TO EACH OTHER. WHAT DO YOU THINK JOE?
3
FRANKLY BOYS, I'M OPEN-MINDED ABOUT THE WHOLE SITUATION. OF COURSE, REHABILITATION CENTERS WILL DO A LOT TO HELP THEM BEFORE THEY COME TO US, BUT WE MUST DO OUR PART!
I THINK OUR READERS SHOULD TELL US WHAT THEY THINK. SOME OF THEM MAY ALREADY HAVE HAD EXPERIENCE THAT WILL BE VALUABLE TO US ALL. WHAT HAVE YOU DONE ON THIS PROBLEM, READERS?
4

LETTERS TO PETE & BILL are paid for when published, without regard to length. We use letters (not over 200 words) discussing material in this department or any other pertinent matter. Contributions of greater than specified length may be given consideration as articles. Suggestions for the Pete & Bill dialogue are also welcome and if used will be paid for. If these pages interest you –contribute something to them to interest others. Address PETE & BILL, Textile World, 330 West 42nd Street, New York 18, N. Y.

Letters From Readers

Enough Information for Cooperation

For Better Informed Foremen
(Pete & Bill, Jan. 1944)

Dear Pete & Bill:

Our foremen often fall short of the proper material to get the most efficiency out of the plant, to make money for their employer, to cooperate with the employees so that a general good, cordial feeling predominates in every department of the plant. A good feeling of cooperation should and must be stressed in any plant. Discord and ill feeling should never be allowed to creep into a corporation: no antagonism should be allowed to enter an organization. Always a strict feeling of brotherly love should take a firm stand. Animosity should never stalk into a business. Each individual should work with every other, that peace and good will exist at all times.

I can hardly agree that top management should share all its plans with the foremen. Perhaps there are things occasionally that should be withheld. (PB 122)

Should Know All Plans Affecting His Department

For Better Informed Foremen
(Pete & Bill, Jan. 1944)

Dear Pete & Bill:

Whether top management should share all its plans with the foreman is not answered by an easy "yes" or "no."

Surely the foreman has a right above every one else in his department to know the plans of management as they affect the department over which he is foreman and, as such, a part of management. In addition he should be kept informed on plans affecting his association with foremen in departments immediately related to his by sequence of operation or by service upon which he depends for cooperation in getting his immediate job done. In some instances he must know of the movements of top management in general procedure—and this suggests the operation of a "filtering" system to be conducted somewhat as follows:

1. All plant operations policies are released by board of directors to the plant's executive head.

2. He, in turn, discusses the policies with his divisional and functional heads such as plant manager, sales manager, engineering head, office manager and local financier.

3. To each of these information should be given of interest to all indirectly and to each specifically as pertaining to his phase of the business.

4. Each divisional head passes through to his staff of superintendents or general foremen the items to be made available to the foreman on job.

This is the best way I know of to stop rumors and gossip, and to estab-

MEMORIES OF OLD MAN CARELESSNESS

By MARTHA B. PITTENGER

No. 15—COMPRESSED AIR

Step right up, folks, as the wheel of accidents turns, where it stops and who are the lucky and unlucky ones nobody knows —but me. I have a record here of an accident that seems almost unbelievable, because, after all, you'd think adults would know better than to practice such unsafe habits.

There are some who seem to think it terrible to leave the mill with cotton lint on their clothes, which is all right as far as it goes.

One evening I was watching a young woman who had made a habit of using the hose to blow the lint and cotton off her clothing. Till then she had escaped uninjured, as had others who were doing as she did.

It so happened with my encouragement she dared to place the hose close to her shoulders, blowing the cotton from the neck of her dress. As she was about to put the hose down, the pressure of the air made the hose uncontrollable, the nozzle swung upward past her ear, forcing the air into her head. The pressure caused a broken ear drum, impairing her hearing for life.

This compressed air equipment is put in the mill for use on the machinery which can stand the great force of air. Yet, some workers continue to use it, forgetful that the flesh is lacking in the strength of steel and iron. This unsafe habit is a great help to me in my business of creating accidents.

lish confidence both vertically and horizontally in organization groups. It also will eliminate petty jealousies and bickering. (PB 121)

Should Not Tell All Plans

For Better Informed Foremen
(Pete & Bill, Jan. 1944)

Dear Pete & Bill:

Management should not tell foreman all about plans for the future. When management is ready to put plans into operation then foremen should be called together and told about them.

Management should not tell foremen all about the future because too many plans do not get fulfilled. If we as foremen (because I am one) were told every idea that originated in the front office we would fill up a lot of time thinking about the things that management gets paid to think about, and everytime a new idea was discarded we would have to be told about it. If you are like I am, we would also like to be told why.

Foremen should be told when management is ready to really start something new. The matter should be explained fully because co-operation and usefulness are not so good blind as when they can see. After the foreman is told, then he in turn should tell the people in his department how they fit into the new operation. He can do this because he knows the whole story. (PB 124)

BOOSTING EMPLOYEES' *Morale*

Kendall Rewards Workers with 100% Attendance

The Kendall Co's. Pelzer Mills employees with records of 100% attendance in 1943, were honored at a turkey banquet recently in Pelzer, N. C.

H. K. Hallett, general manager of Kendall's southern plants, presented gold pins to employees who were on the job every work day for the year. Attendance badges were also awarded periodically during the year.

"Warcasts" Spur Efforts of Workers

Inaugurated by the Industrial Incentive Division of the Navy, warcasts are proving effective in keeping workers abreast of the war's developments while at their jobs, and in tracing the direct relationship of their efforts to the fighting fronts, the Navy department said.

Under-secretary of the Navy James Forrestal points out that "War bulletins, accompanied by a message from the Navy, brought to plants on a regularly scheduled basis through public address systems, will emphasize constantly that workers are an active part of our fighting team. By bringing a daily report from the battle zones to the production front, the workers, will be spurred on to do a better job."

Among the cities where warcasts are now available are Boston, Philadelphia, Pittsburgh, Rochester, New Castle, Pa., Norfolk, Va., Cleveland, Detroit, Cincinnati, Portland, Ore. and San Francisco. Warcasts will be in operation within several weeks at New York, Chicago, Los Angeles, Atlanta, Columbus, Elmira, N. Y. and Hartford, Conn. Other cities will follow shortly, the Navy said.

Celanese Gets National Security Award

Fred T. Small, plant manager, reports that the Cumberland, Md., plant of the Celanese Corp. of America has been awarded the National Security

Textiles—"on the land and on the sea"

The Marines carry an all-purpose poncho made of waterproof fabric. One side is green for jungle camouflage . . . the other is brown for desert protection.

Protection as a raincape . . . or to keep supplies and equipment dry . . . the needs of our Soldiers of the Sea are varied.

The Marine poncho consists of two thicknesses of coated fabric. Soft and light in weight, it remains flexible in any climate.

The Textile Industry has produced millions of yards of coated fabrics, supplying protection for men as well as equipment and supplies.

Mills making these fabrics depend on Butterworth Machines at every step in the Wet End of Textile Finishing . . . bleaching, boiling-out, drying, calendering, dyeing.

Butterworth Engineers freely offer their cooperation to mills seeking to achieve increased productive efficiency . . . or to repair or replace worn-out or obsolete equipment.

All of our facilities not required for Ordnance production are available to help you solve your present finishing problems, and aid you in your post war plans. Let us serve you now.

H. W. BUTTERWORTH & SONS CO.
Phila. 25, Pa. Serving Textile Industry since 1820
Offices in Providence, R. I. and Charlotte, N.C.
In Canada: W. J. Westaway Co., Hamilton, Ont.

***64%**

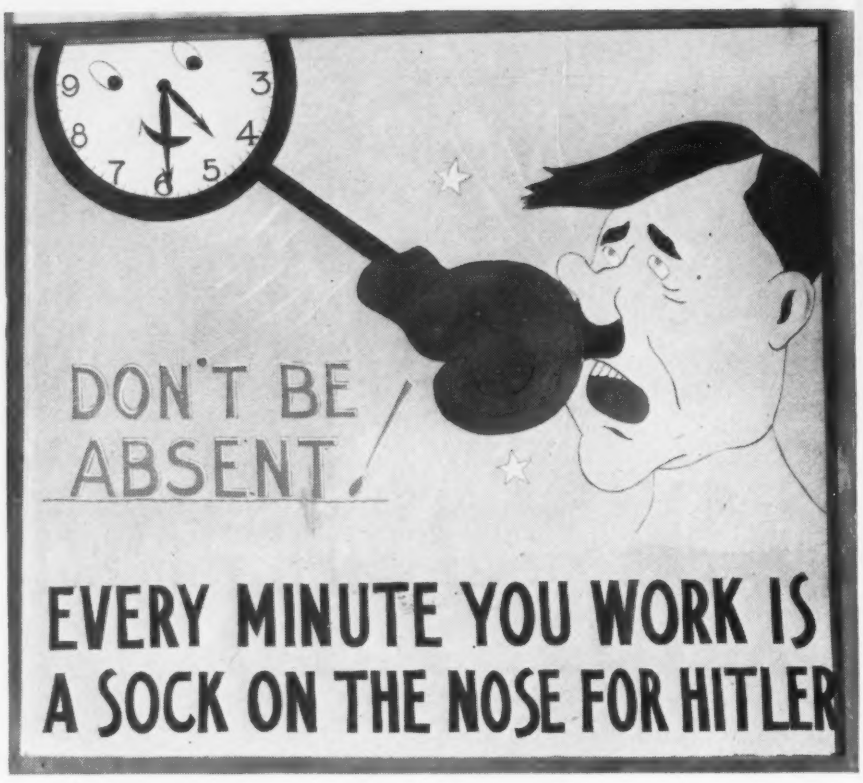
of equipment now in use in the wet end of textile finishing cannot operate at a profit in competition with modern machines.

*Proved by Research

Butterworth

PRODUCING GUN MOUNTS FOR THE UNITED STATES ARMY

Rock Hill (S. C.) Printing & Finishing Co. has done a complete job of fighting absenteeism with dramatic posters. One of a group which the management has found effective is shown above. →



Award for "general excellence in the observance of security and protection regulations of the Office of the Chief of Ordnance." In a letter to Dr. Camille Dreyfus, president of the company, the award was announced from the Office of Civilian Defense of the Third Civilian Defense Region in Baltimore.

More than 2,000 operatives received training in civilian defense at this plant. There are 1,062 Celanese operatives who took Red Cross first aid and 394 received 20-hour standard Red Cross certificates. Out of 128 who took air raid warden training, 40 met the highest requirements and 88 completed limited training.

G.E. Puts Returned Soldiers Back to Work

Twenty-four hundred General Electric employees who entered the armed services since Pearl Harbor and have been honorably discharged from active duty, have been placed back into the working forces of the company, Gerard Swope, president, has announced. Records show there are still 39,236 of the company's employees in service and that 156 have lost their lives or are reported missing in action.

Viscose Corp's. 25-Year Men Dined

Forty-one employees of the American Viscose Corp.'s plant at Roanoke, Va., were guests at a banquet given recently in honor of their 25 years of service with the corporation. Service pins were presented to each one by Frank H. Griffin, vice president and technical director of the corporation.

C. & A. Honors Long-Term Employees

About 100 employees and officials of Collins & Aikman, Plant E, at Roxboro, N. C., were given recognition recently for 10, 15, 20 and 25 years of association with the company.

Presentation of pins was by S. M. Ford, resident manager. Sidney Marsh, personnel director, was in charge of the program, which was in the form of the annual get together of the company's Veterans Club.

Book Reviews — NEW PUBLICATIONS

Textile Opportunities in China

TEXTILE INDUSTRIES OF CHINA AND JAPAN; Fessenden S. Blanchard; Textile Research Institute, Inc., New York; $1.

That postwar China will offer opportunities for both American textile manufacturers and textile machinery manufacturers is one of the conclusions voiced by Mr. Blanchard in this 70-page report. A large amount of textile machinery, American capital, and American engineering and managerial assistance will be required if China is to become a major textile manufacturing country. Although industrialization of China presents numerous problems, and over-optimism should be avoided, American textile men will do well to watch China carefully, and be prepared to help make her a great power and America's greatest customer.

Another conclusion reached by Mr. Blanchard is that despite the fact that the potential Japanese imports constitute a distinct menace from the point of view of the American textile industry, Japan must be allowed to expand her foreign trade if she is to be allowed after the war to continue the industrial development on which her growing population relies.

Survey of Fiber Developments

NATURAL AND SYNTHETIC FIBERS; Milton Harris and H. Mark; Interscience Publishers, New York; $60 annually; binder $3.

A new service offered to the textile industry consists of abstracts of scientific and technical literature and patents pertaining to the properties and utilization in manufacturing processes of all natural and synthetic fibers. Number of abstracts to be supplied annually is estimated at about 500 each consisting of two or three pages on an average. A decimal filing system will permit the abstracts to be filed easily so that all material on a given subject will be in one section of the file. Subjects include physical and chemical properties, analysis and testing, manufacturing processes, etc.

Two Quaker products make possible

CASEIN FABRIC FINISHES

of even shades and smooth, soft drape

NEW CASEIN FIBRES—blended with rayon—make possible many interesting new fabrics. But their sensitivity to alkalinity and high processing temperatures create special problems of scouring and finishing to yield clear, even shades and attractive "hand." Harshness and boardiness often have proved difficult, if not impossible, to eliminate—*using conventional types of processing compounds.*

To help overcome these problems, Quaker now offers two products especially suited to the processing and finishing of casein fibre fabrics:

QUAKER
DIANOL "AG"
New Synthetic Detergent

QUAKER
PRO-SO-TEX #545
Organic Softening Compound

An outline of a successful procedure for adapting these two Quaker products to conventional scouring, dyeing and finishing practice is available. We'll gladly send you a copy . . . or, still better, request a Quaker Process Engineer to call and help you to develop the qualities of finish and sales appeal you desire.

If yours is a problem involving the processing of fabrics composed of casein and rayon staple fabrics, these Quaker products and the wide experience of a Quaker Process Engineer should prove extremely valuable. Just mail the handy reply form below.

QUAKER CHEMICAL PRODUCTS CORP.
CONSHOHOCKEN, PA. Other Plants in CHICAGO and DETROIT
Warehouse Stocks in Principal Industrial Centers

☐ Without obligation to me, please have a QUAKER Process Engineer call.
☐ Please send data on DIANOL "AG" and PRO-SO-TEX #545 for processing—

_____
(Name Fabric)

Name _____ Position _____

•••PLEASE PRINT COMPANY NAME AND ADDRESS IN MARGIN BELOW•••

DIANOL "AG" and PRO-SO-TEX #545 also play unique roles in improving the sales appeal of hosiery and other fabrics. Tell us which fabrics are of special interest to you so we can send complete details.

Round Table

FOR EXCHANGE OF IDEAS

With meetings of operating executives curtailed, there is need of a meeting place where mill men can discuss problems among themselves. The Round Table is designed to supply this need. It is open to all readers for discussion of subjects relating to mill management and operation. Bring your problems to the Round Table. Give other mill men the benefit of your experience, and get their ideas in return. Names of contributors to the Round Table will be held confidential if so requested. Sign your contribution with a pen name if you wish to preserve complete anonymity, but include your real name and address as evidence of good faith and to permit payment for items published. Address contributions to: Editor Round Table, Textile World, 330 West 42nd St., New York 18, N. Y.

Spinner Reports on Rubber Type Aprons

Being in the spinning department, I have made a fairly accurate study of rubber aprons versus leather aprons and have taken into consideration the many variables that continuously crop up.

Flatly, if I had my way I would not have a leather apron in the spinning room. That is rather a broad statement—but, I have yet to have a rubber apron come off on 29 spinning frames in well over 9 months, other than those that had been cut or hooked by carelessness.

The rubber apron has a tendency to spread in width, completely enclosing the cradle, while the inner fabric restrains stretch in length. This spread in width prevents, to a large extent, the accumulation of lint in the apron. Otherwise this lint might form a wad, plugging the yielding nip of the apron and cause "cockled" yarn. This cockled yarn is the same as found when setting the rolls under the staple length. This lint accumulation happens quite often on leather aprons, weakening the lap and eventually breaking the apron.

The rubber aprons, I believe, result in better gripping, making more positive the break-draft, and result in less apron laps. *(R-1a)*

Review Results of Job Methods Training

Having followed the Job Methods Training Program of Training Within Industry, sponsored by the War Manpower Commission, I would like to read in the Round Table comments of others as to whether this training of key men in job methods has resulted in increased production.

I believe many of us in textile plants must revise some of our ideas about how to get the optimum machine and operator production. Many mills feel that they have the best system available when they set up jobs based on conventional time and motion study. However, in our mill we have found that before making rate-setting studies that the job, including the machine set-up and operator motions, should first be improved as much as possible before standards are set, by using JMT principles.

For example, on our warpers we found that by changing the creeling arrangement and eliminating some operator motions and shortening others, that production was improved greatly. To do this properly required the cooperation of both foremen and operatives. Many suggestions for improvements can come from operatives but they must be shown how improvements will help them or they will resist the change. *(R-42)*

Can Two or More Yarns Be Run on Same Frame?

My job is second hand in the card room of a mill just starting to use spun rayon, viscose process, where heretofore we have run only cotton. Our mill has not used spun rayon very long and we still run at least half straight cotton yarn. My overseer tells me we cannot put 100% spun-rayon and rayon-cotton blends on the same drawing, fly and spinning frames. He also claims that two different spun rayon-blends can never be put on the same frame. I don't agree with this argument, but since I have had only little experience in handling spun rayon my arguments are weak. However, I believe that if we would try different spun-rayon blends on the same frames, they would run.

I would like to get some other mill overseers or superintendents to write the Round Table if they are running more than one spun-rayon sliver, roving, or yarn on a frame as whatever information furnished will help both my overseer and me. *(R-43)*

Which is the Best Way to Blend Spun Rayon?

I am in doubt as to the best way to blend spun rayon in the opener and picker room. There are as many different ways of doing the blending as there are mills running spun rayon, it appears. After studying the problem and visiting a number of mills, I believe the problem can be narrowed down to the choice of one of two methods generally used. These methods are: (1) Use more opening and blending machines followed by a one-process picker, and (2) use few opening and blending machines or a floor mix and followed by a breaker picker and then blending again with four laps in a finisher picker.

Which is the best method to use? Frankly, I do not know, but I would like to have several opinions from Round Table readers. If you have one or the other of these two systems, please write telling why you like the system. If you are not entirely pleased with your present set-up, your reasons for not being entirely "sold" will be helpful, I feel sure such a discussion of rayon blending will also help other readers of the Round Table. *(R-39)*

How to Figure Percent of Draft

In spinning woolen yarn on a mule, *A* says that the entire length that the carriage of a mule moves outward from the delivery rolls, which is generally 72 in., is used to figure the percent of draft. *B* says the length of roving de-

(Continued on page 148)

SPOTS STOP . . . *Costs Drop*

SUN LUBRICANTS

end damage to Nylon . . . reduce maintenance on loom bearings

Parachutes have attained great importance as military weapons in the present war. Chutes for landing cargo . . . for bombing . . . and for flares—all have an essential function to perform, and their need becomes ever-increasing.

Splattering and spotting of nylon were difficulties encountered by one mill, weaving parachute cloth. Approximately 100 looms were in operation . . . oil used did not stay on bearings and extra maintenance was required.

Losses of time and material resulted . . . production slowed . . . costs soared, until a switch was made to Sun Lubricants on the friction arms and all plain bearings.

Since adopting Sun Lubricants, almost four years ago, they have experienced no difficulties and bearings are adequately lubricated at all times. Splattering on the goods has been entirely eliminated . . . maintenance costs reduced and man-power conserved.

This is another case history of how Sun Engineers and Sun Lubricants are helping textile mills solve their lubrication problems and cut maintenance. They can help you, too, whether it's lubricating or processing. Just call or write

SUN OIL COMPANY • *Philadelphia 3, Pa.*

Sponsors of the Sunoco News Voice of the Air—Lowell Thomas

SUNOCO

SUN INDUSTRIAL PRODUCTS *HELPING INDUSTRY HELP AMERICA*

Breaks in Skein Winding

Technical Editor:

We have been paying piece-rate for our skein winding for several years and have always encountered considerable trouble in establishing uniform rates. We have a base pay, or expected normal earning, and try to establish rates that will result in an average wage for the week at, or slightly above, the base. Yet earnings vary considerably even on the same denier.

For example, our records show that current earnings on 75-den. are $8 a week less than six months ago, although the rate, skein length, and winding system have remained unchanged. Can you suggest a method of payment that will keep earnings more nearly comparable and be fair to the individual abilities of our operators?

For your information, our yarn is all soaked for throwing prior to winding. We are running chiefly 75-den., 30,000 yd. skeins, and 100-den., 22,000-yd. skeins. (8968)

The problem you mention has plagued throwsters for years. Some have resorted to hourly rates, but it is assumed from your inquiry that you wish to continue the advantages of an incentive system if such a system can be applied fairly.

You did not blame your problem on war conditions of deteriorated quality in yarns and employees which is commendable, and it appears you would be willing to take the trouble that will be necessary to solve your problem. It can be solved, possibly easier than you think.

First we must recognize three variables: (1) differences between operator abilities, (2) variations in yarn quality, and (3) variations in methods. The first variable can not fairly be controlled, the second can be partially controlled or compensated for, but the third must be strictly controlled.

To consider the operator variable, it can be assumed that a series of rates are fair if the same operator can earn the same amount on each of them, once accustomed to the work. If this can be demonstrated, then differences in earnings from operator to operator can be assumed to be because of ability or to energy expended—if the work method is reasonably the same.

Often a change in earning can be found to be in an actual change in the amount of work expected as when duties are added or removed. An example, in skein winding, might be a change in the place where the operator obtains her yarn on bobbins. It is an old custom to add a bobbin boy or two to help out skein winders who are having difficulties. (Many plants find it economical to use bobbin boys all the time.) Another example that often upsets rates is changing from a skein-to-a bobbin method to a full-bobbin method; this latter requires much more operator attention and backtracking. This latter system should not be used unless clearly demonstrable that in later processes the full-bobbin method saves more than it costs in skein winding.

In any event, it is impossible to keep a fair rate if the job methods (or elements) do not remain fixed. They should be listed at the time the rate is set, if possible showing the cost of each, but in any event written down. Both the worker and management should know exactly what these elements are.

This leaves just the quality of the yarn to be considered. It, admittedly, will vary between manufacturers and within itself. Although the winding of third-grade (inferior) quality yarn

(*Continued on page 144*)

WINDING PIECE-RATE DETAIL

Mill ..... Date ..... Report No. .....

Basic Data

Machine		Method		Yarn	
1. Model		1. Eff. Wanted		1. Denier	
2. No. Spindles		2. Yd. Bobbin		2. Yd. Skein	
3. Speed		3. Dia. Cleaner		3. Quality	
4. Type Twist		4. Breaks/M-yds		4. No. Tiebands	
5.		5.		5.	
6.		6.		6.	

Fixed Units	Min.	Min./lb.	Job Details	
1. Prepare Skein			1. Skeins delivered by yarn boy	
2. Mount Skein			2. Bobbin Boards handled by yarn boy	
3. Start Up			3. Operator fixes own breaks	
4. Doff Bobbin			4. Waste collected by second hand	
5. Rack			5. Knotter used	
6. Mark			6. Mch. cleaned by cleaning crew	
Variable Units			7. Floor swept by sweeper	
1. Breaks			8. Empties cleaned by bobbin boy	
2.			9.	

Allowances		Guarantees Based on Factors Here	
1. Personal		1. Rate per lb.	
2. Walk Time		2. Rate per board	
3. Inspection		3. Base Pay per hr.	
4. Incentive		4. Min. Pay per hr.	
5.		5.	

MUSIC CUTS ABSENTEEISM!

ABSENTEEISM in war plants may indicate excessive worker fatigue, boredom, or poor morale.

Industrial music has materially reduced absenteeism in a number of industries.

Nervous tension of workers is relieved and worker spirits boosted by the use of selected music at fatigue periods occurring during each shift. Many users report that greater safety consciousness is an additional benefit of music.

Results of research to date prove that:

(1) Productive efficiency is increased with piece workers.
(2) Quality of work is improved; rejects lessened.
(3) Dispensary visits are decreased.
(4) Morale is better; workers *like* music.
(5) Absenteeism is reduced materially.

These results, actually proved by scientific research, can be reproduced in other plants. Why not yours? An RCA sound system suitable for industrial music also provides paging facilities for locating key personnel quickly, for point to point communication, and for emergency maintenance work; it is also an excellent medium for reaching all employees instantly.

RCA Industrial Music Service

Besides supplying complete sound systems, RCA Industrial Music Service provides selected recordings from the great library of RCA Victor and Bluebird music.

Subscribers to this service also receive the benefits of RCA Psychological Research on industrial music and the help of RCA specialists in planning effective programs.

Free Booklet

The story of industrial music and what it can do for you is told in the new booklet "Manpower, Music, and Morale" sent without obligation on request. Send the coupon, or write to RCA, Industrial Music Service (70-60A), Camden, N. J.

FREE! This new 16-page book telling how to use music in industry, and what it can do for you.

RCA, Industrial Music Service (70-60A), Camden, N. J.

Please send the booklet "Manpower, Music, and Morale" to:

Name.....

Company.....

Address.....

City.....*State*.....

RCA INDUSTRIAL MUSIC SERVICE

RCA

RADIO CORPORATION OF AMERICA

NEWS ABOUT Suppliers

E. H. Jacobs Mfg. Co., Danielson, Conn., has named Everett Pearson as superintendent in charge of production at the Danielson plant. He has been with the company for two and a half years, coming to Danielson six months ago from Charlotte, N. C., where he held a similar position at the concern's southern plant.

Hooker Electrochemical Co. has assigned Thomas H. Trimble as its sales representative to the Eastern Middle Atlantic territory with headquarters at the New York office, 60 East 42nd St. Ralph E. Davis, Jr., has succeeded him as sales representative in the Upper New York and Western Pennsylvania area, with headquarters at Niagara Falls, N. Y.

National Starch Products, Inc., New York, have launched their 1944 trade and industrial advertising campaign with full-page space devoted to their work with the U. S. Army Medical Department. Subsequent advertisements in this series will explain the relationship of National to the requirements of the Ordnance Department, the Quartermaster Corps, and other war agencies.

Franklin Needle Co., Franklin, N. H., has been sold to Walter F. Duffy, who controls the Acme Knitting Machine & Needle Co., the Belmont Hosiery Co. and a woolen mill in Worcester, Mass. The Franklin plant was established in 1879 and has been operated since 1901 by George L. Hancock. Mr. Duffy expects to continue manufacturing latch needles and knitting machine accessories under the same name.

G. T. ROBINSON, who has been named manager of the Cincinnati office of Wyandotte Chemical Corp. (Michigan Alkali Division), as reported in this column last month.

WILLIAM R. NORTHLICH, of the Washington, D. C., office of Owens-Corning Fiberglas Corp., who has been transferred to the company's general offices in Toledo, Ohio, as assistant to the general sales manager. He is succeeded in Washington by A. E. Kincaid, Jr.

L. Sonneborn Sons, Inc., New York, have instituted an employees' retirement plan providing both monthly pension payments and death benefits without cost to the individual participant.

Borne Scrymser Co., Elizabeth, N. J., has added Wesley M. Dynes of Newton, Mass., and Malcom F. Fryer of Riverside, R. I., to its New England sales force. Operating under the supervision of Austin M. Knight, both Mr. Dynes and Mr. Fryer will be attached to the textile division, and will call on New England mills.

Robert Reiner, Inc., Weehawken, N. J., held a patriotic production rally on Feb. 4. This firm has discontinued all production of knitting machines and concentrated its efforts on producing airplane parts, hydraulic units for gun mounts on ships, and radar equipment. At the rally the guest speaker was Capt. Alvin Grauer, U. S. Army, and the Navy was represented by Lt. E. P. Douglas.

Engineering Sales Co., Charlotte, N. C., has appointed Henry C. Burr, Jr., of Atlanta, Ga., to its staff.

Pennsylvania Salt Mfg. Co., moved its New York office on Feb. 1 to 40 West 40th Street.

Acme Steel Co., Chicago—P. L. Dafoe, lately on leave of absence as manager of Acme's Central Division, has returned to his duties with that organization after spending 15 months in the Tank, Automotive Center Office of the Chief of Ordnance, Detroit.

Fairbanks, Morse & Co., Chicago, has appointed G. N. Van Epps, formerly manager of the diesel department, to succeed O. O. Lewis, as manager of the Atlanta, Ga., office of the company.

American Chain & Cable Co., Inc., Bridgeport, Conn., has appointed Alton Parker Hall as assistant general manager of sales, with headquarters at 30 Park Ave., New York. Mr. Hall has been with Bethlehem Steel Co. since 1922, and since 1938 assistant manager of sales of the New York office.

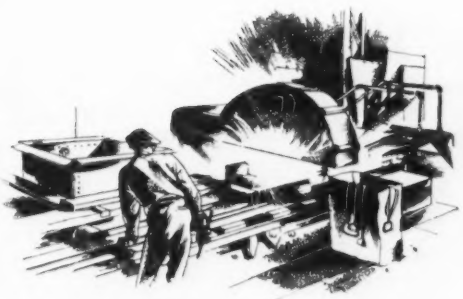
The B. F. Goodrich Co., Akron, Ohio, has made the following appointments in the recently created chemical

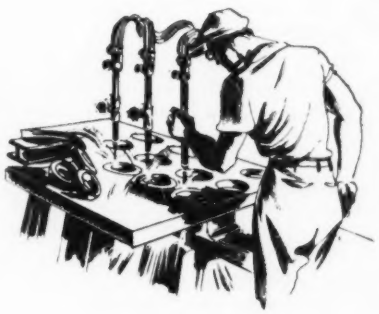
£500 FOR WORSTED IMPROVEMENT

A prize contest has been announced by Prince-Smith & Stells, Ltd., Keighley, England, worsted machinery builders, with awards totaling £1000 (about $4000), for ideas for improvement in machinery for worsted combing, drawing, spinning and twisting, on both English and French systems. First prize is £500, second £250, third £100, fourth £50, and ten consolation prizes of £10 each. The improvement must increase mechanical efficiency, decrease production costs, improve products, or render machines easier to operate thus reducing operative's fatigue. Entries should be addressed to J. Gordon, Harrison, Taylor & Co., accountants, 7 Bond Place, Leeds 1, England, and those from overseas will be accepted up to July 31, 1944. Envelopes should be marked "P.S. & S. Competition." Suggestions must be the original ideas of the competitor and a signed declaration to this effect must accompany the entry.

Can Ryerson Steel-Service Help You?

Steel Cut to Close Tolerance. Experienced crews working with modern high-speed friction saws, giant shears, powerful hack saws and other metal-working machinery can turn out steel quickly—cut, formed or otherwise prepared to your requirements. Steel that is cut to exact size and specification eliminates scrap and frees your man-hours for more production.





Any Shape Expertly Flame Cut. Skilled operators and modern equipment—combined with ever-present stocks of all types of steel—assure quick, accurate flame cutting and prompt delivery. Almost any shape, no matter how intricate, can be fashioned from steel plates or shapes. You save the time and expense of forging or casting and gain the added strength of rolled steel. Complete welded and riveted assemblies are also fabricated by Ryerson.

Metallurgical Help For Steel Problems. Our staff of engineers and metallurgists are experienced in serving customers in every branch of industry. These men have displayed a genius for solving problems pertaining to steel application, heat treating and fabrication. Theirs is the practical type of *know-how* and you can depend on them to work with you whenever a difficulty arises.

Speedy Delivery Without An Expediter. Every man and woman in our eleven strategically-located plants knows the meaning of the word *rush!* The Ryerson organization is geared to getting your steel delivered in the shortest possible time. Write for your copy of the Ryerson Stock List—complete catalog of steels in stock for immediate shipment including: bars, shapes, plates, sheets, structurals, tubing, carbon and alloy steel, tool steel, Allegheny Stainless and many others.

JOSEPH T. RYERSON & SON, INC., STEEL-SERVICE PLANTS AT: CHICAGO, MILWAUKEE, ST. LOUIS, CINCINNATI, DETROIT, CLEVELAND, PITTSBURGH, PHILADELPHIA, BUFFALO, BOSTON, JERSEY CITY.

RYERSON

division: William I. Burt, general manager of plants; Dr. Frank K. Schoenfeld, director, technical and development; Dr. Victor E. Wellman, director of purchases; Harry E. Foster, general auditor. The division operates the Government-owned synthetic rubber plants at Louisville, Ky., Borger and Port Neches, Texas, as well as raw materials plants at Louisville, Ky., Niagara Falls, N. Y., and Akron. Among the most important products of the latter are polyvinyl resins. The company has developed and is offering a unique group of these to industrial users under the name Geon, which will expand the field served by this class of plastic materials. The company has appointed H. W. Catt as manager of the chemicals and pigments department of the purchasing division. He joined Goodrich in 1929. He succeeds Dr. Victor E. Wellman, whose new post is mentioned above.

Crocker-Wheeler Division, Joshua Hendy Iron Works, Ampere, N. J., has appointed Lyman D. Warner as its sales manager. He has been assistant sales manager since 1941, and active in the sale of motors, generators and flexible couplings for Crocker-Wheeler since 1937.

Compressed Gas Manufacturers Association has elected as its president Thomas Coyle, chlorine products manager of the Electrochemicals Department of E. I. du Pont de Nemours & Co. Mr. Coyle joined the Du Pont company in 1930 when that company acquired Roessler & Hasslacher Chemical Co., with which he had been associated for 26 years.

North American Philips Co., Inc., New York, in preparation for expected post-war expansion in the industrial electronics field, has made the following staff additions: M. W. Lightcap is named distribution manager; Harry D'Almaine will specialize in commercial control and analysis. The former was recently with Devoe & Raynolds Co. and the latter with Irvington Varnish & Insulator Co.

Resin Adhesive Manufacturers Assn., Washington, D. C., has been formed by ten large manufacturers of synthetic resin adhesives whose representatives met in New York Jan. 13. The association aims primarily at "offering cooperation in utilizing synthetic adhesives for war products and unified industry action on industry-wide problems in dealing with the armed services and other government agencies." Officers of the new association are: president, W. F. Leicester (vice president, Casein Co. of America); vice president, C. F. Hosford, Jr. (president, Pennsylvania Coal Products Co.); secretary-treasurer, J. E. Waller. In addition to the two companies just named the members are Plaskon Division of Libbey-Owens-Ford Glass Co., American Cyanamid Co., I. F. Luchs, Inc., Durez Plastics & Chemicals, Inc., Catalin Corp., Monsanto Chemical Co., Reichhold Chemicals, Inc., and Marblette Co.

DWIGHT R. MEANS, associated with the Columbia Chemical Division of Pittsburgh Plate Glass Co. for 21 years, who has been named assistant to the vice president in charge of the division. He was lately technical director and had previously served as research director and assistant superintendent.

General Electric Co., Schenectady, N. Y., has appointed E. A. Green as general assistant to the manager of the motor division. In 1927 he joined the G-E industrial engineering division where he specialized in the application of electric equipment to textile and rayon machinery. He was transferred to the motor division early in 1936, and in 1937 was placed in charge of the Lynn motor section of that division.

Bunting Brass & Bronze Co., Toledo, Ohio, has appointed Robert R. Hirsch as director of sales, succeeding George H. Adams, recently named executive vice president of the company. For the last 25 years Mr. Hirsch has been connected with SKF Industries, Inc., in recent years as district manager of Detroit and Cleveland areas.

Homestead Valve Mfg. Co., Coraopolis, Pa., has been awarded the second star by the Maritime Commission to be added to the company's Maritime "M" Pennant.

Babcock & Wilcox Co.'s Barberton plant has been granted a new Army-Navy "E" Pennant with three stars.

Cochrane Corp., Philadelphia, was given the Army-Navy "E" Award for excellence in production on Feb. 15.

Alloy Steel Products Co., Linden, N. J., has been awarded a star for its "E" pennant which was received last summer from the Army and Navy.

Stewart-Warner Corp., Chicago, has elected William A. Patterson, president of United Air Lines, Inc., to its board of directors to fill the place left vacant on the directorate by the death of Frank A. Ross, senior vice president. Frank A. Hiter, vice president and director, has been designated senior vice president. He will act as chief executive officer in the absence of the president, James A. Knowlson.

Thermex Division of Girdler Corp. has appointed Boyd R. Hopkins, of Pasadena, Calif., to its sales department to represent the firm on the West Coast.

Pesco Products Co. (a division of Borg-Warner), Cleveland, Ohio, has promoted Ed M. Whalley to works manager; Louis Matthews to general superintendent; Jay M. Roth to director of engineering for mechanical developments; John A. Lauck to chief engineer of the pump department; and Ed S. Moreland to assistant sales manager to direct field activities under the supervision of N. M. "Dutch" Forsythe, vice-president in charge of sales.

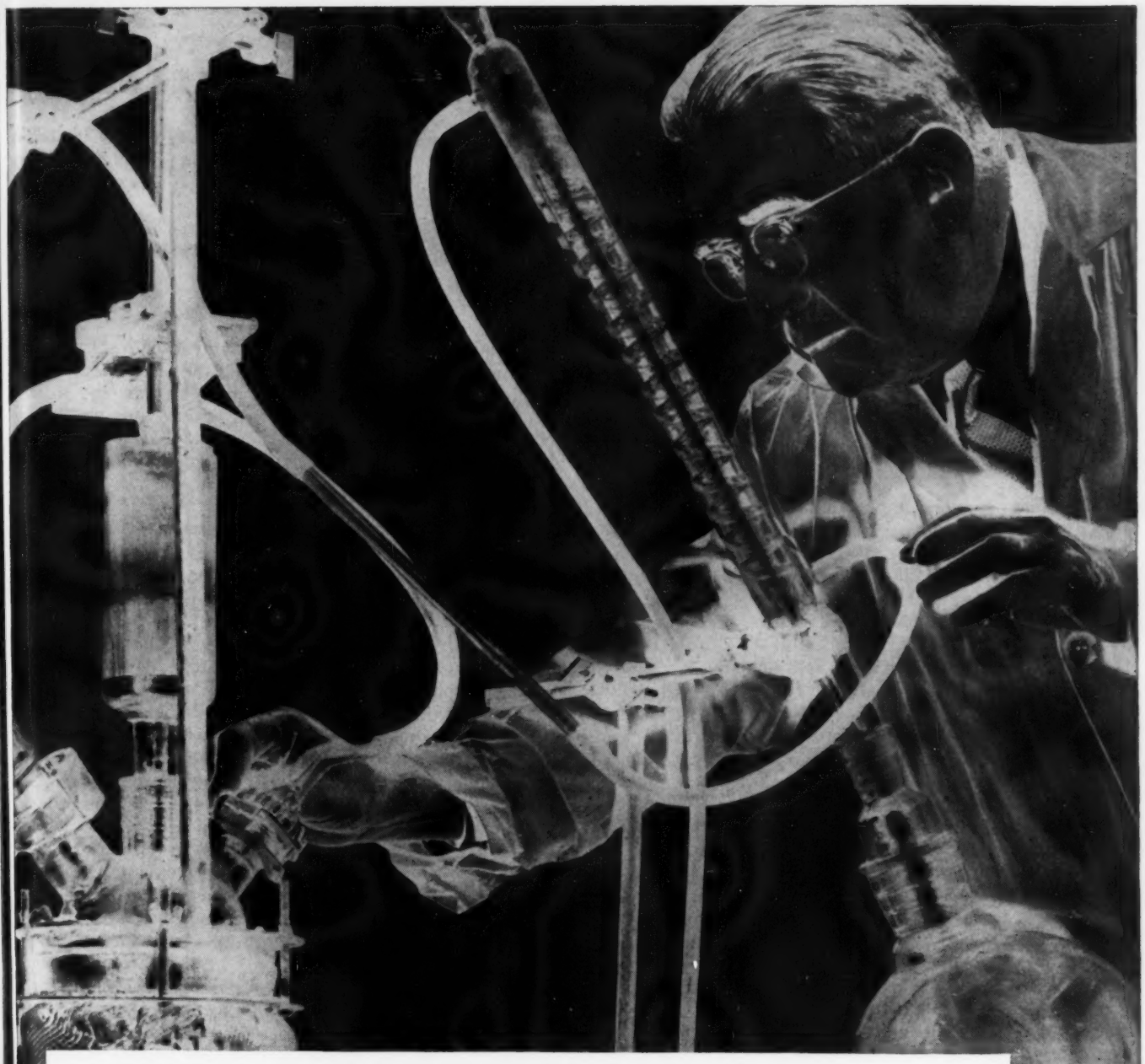
U. S. Sugar Co., Clewiston, Fla., has a diversification program for its Everglades development that will cost nearly $20,000,000 and provide year around agricultural employment for more than 7,500 persons. Construction includes starch house buildings that will cover six acres of ground and produce 75,000,000 lb. of starch annually.

The Goodyear Tire & Rubber Co., Akron, Ohio, has named Frank T. Magennis a vice president of The Goodyear Tire & Rubber Export Co. Prior to his promotion Magennis was an assistant manager of the export company. He has more than 25 years service with Goodyear, practically all of which has been in the export field.

W. J. Westaway Co., Ltd., Hamilton, Ont., Canada, has made some important executive changes. William A. Kennedy, who has been vice president, is the new president. Mr. Kennedy has been associated with the firm since 1919, following a service in the textile trade as a sales agent. Jack C. Westaway, son of W. J. Westaway, founder of the firm, has been moved up from a director and secretary-treasurer to the position of vice president. John A. Duncan, recently Montreal manager, has been named secretary-treasurer. Guy Hunter, who has been named a director, has been in charge of the company's yarn department in Montreal since 1929, having joined the firm in 1920.

Scheffler-Gross Co., Philadelphia, has added Harold M. Miller to its organization as field engineer. He was previously with the Sinclair Refining Co. and Blaw-Knox Co.

(*Additional items on page* 182)



raincoats for building exteriors

Ten years ago our scientists started working on a more effective way of restoring the masonry surfaces of concrete, stucco or brick buildings. Today America's buildings are able to profit from our long research. For we have created a coating which welds itself mechanically and chemically to exterior surfaces. It is called Waterfoil and is manufactured of irreversible inorganic gels. It forms a hard, heavy, fine textured surface coating from which water vapor may escape. Water absorption, however, is impeded, thus preventing serious reinforcing bar rust and spalling. Waterfoil contains only non-critical materials and is now available so that you can decorate and restore your disintegrating masonry walls and preserve your buildings for tomorrow. Any careful workman can apply Waterfoil. Send for the literature on Waterfoil now; all maintenance executives and property administrators should have it.

A. C. Horn Company Established 1897
Building Materials Division
Long Island City 1, New York

WATERFOIL
THE UNIQUE TREATMENT FOR EXTERIOR MASONRY SURFACES

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MANUFACTURERS' BULLETINS

READERS interested in literature reviewed on this page may secure copies by using time-saving coupon below. Mark what you want on it and send it to Textile World, 330 West 42nd St., New York 18, N. Y., being sure to give your name and company connection.

1. Cone drawing in worsted mills is discussed in the January issue of *The Traveler*, published by Victor Ring Traveler Co. This discussion points out that mills today fortunate enough to have cone equipment have a decided advantage in meeting schedules on large government orders. Spindle speeds, bobbin sizes, etc. are listed.

2. Getting the Most from Winding, No. 43 of this series and published by Universal Winding Co., illustrates and discusses special tools used by No. 90 winders. Such items as traverse-wheel hub cleaner, traverse-bar bearing persuader, traverse-bar lever driver wrench, cop forming gage, clutch collar adjusting gage, and others, are covered.

3. A slide rule for determining the correct size air circuit breakers, is being offered by Allis-Chalmers Mfg. Co. This Unit-Sub rule has been constructed from standard AIEE formulas for determining short-circuit currents and takes into consideration all necessary factors such as motor-load and d-c component. While the slide rule has been specially developed for use in load-center unit substation applications, it can be used to check breakers on any system.

4. Velon, its present military uses and its postwar uses, are discussed in great detail in an article appearing in the January issue of *Oilways*, published by Standard Oil Co. of N. J., Pa., La. and Colonial Beacon Oil Co. This article also describes the physical properties of Velon and deals with its manufacture. Numerous photographs are included showing various uses for Velon, included are several illustrating the machine from which the Velon filament is drawn.

5. An Air Express shipping estimator, is being offered by Air Express Division, Railway Express. This estimator permits accurate and rapid calculations of air express rates for various air distances and takes into consideration the new low rates which recently became effective, offering a 12½% saving over old rates.

6. The baling of flax for shipment to England is illustrated and a brief description given as to how the storage problem was solved in an article appearing in issue No. 15 of *Acme Process News*, published by Acme Steel Co.

7. Spraying metal coating is discussed in catalog 42B, being offered by Metallizing Engineering Co., Inc. This catalog also describes the Metco metallizing guns, wires, surface repairing tools and other metallizing accessories used for the spraying of metal in mills.

8. Hydraulic surface grinders and accessories are covered in a booklet being offered by Savage Tool Co. This booklet shows the importance of the grinder when extreme accuracy and fine finishes are to be achieved in surface grinding operations. Various accessories used in the grinding operations are also illustrated and described.

9. "Wage Incentives in Wartime," is the title of a 48-page booklet being offered by Consolidated Management Consultants. This booklet is a guide

PASTE IT ON A POST CARD

This mailing coupon is a convenient size to paste on a penny postcard. **Circle the numbers of the catalogs you want** which correspond to the numbers on the descriptive paragraphs. Fill out the coupon **legibly** and **completely.** Paste it on a postcard, or put it in an envelope if you prefer, and mail it to Textile World, 330 W. 42nd St., New York 18, N. Y.

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My Name..... Title.....
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Fortunately for You . . .

Singer factories have been large producers of precision equipment for use by the Armed Forces on land, sea and in the air. For excellence in this work, numerous Army-Navy merit awards have been earned.

But fortunately for you in the stitching industries, we have also been called upon to deliver great quantities of Singer Sewing Machines for direct military use, and for the production of hundreds of items of war equipment in which stitching is essential. Thus our well-known craftsmanship in this field has been preserved and will be available at peak efficiency when peace-time production demands new and higher standards of efficiency.

Meanwhile, if you have any problems in connection with production of military or civilian products, get in touch with the nearest Singer Shop for the Manufacturing Trade.

P. S.: We are also ready to work with you on your future plans.

SINGER SEWING MACHINE COMPANY

MANUFACTURING TRADE DEPARTMENT

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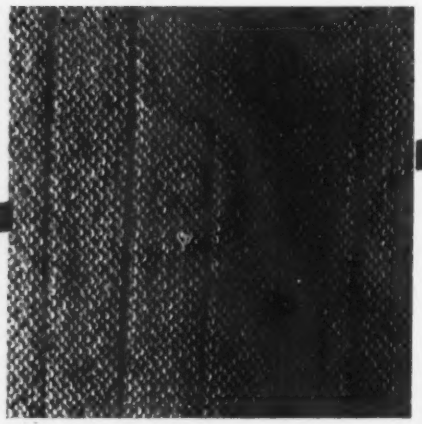
UNEVEN DYEING

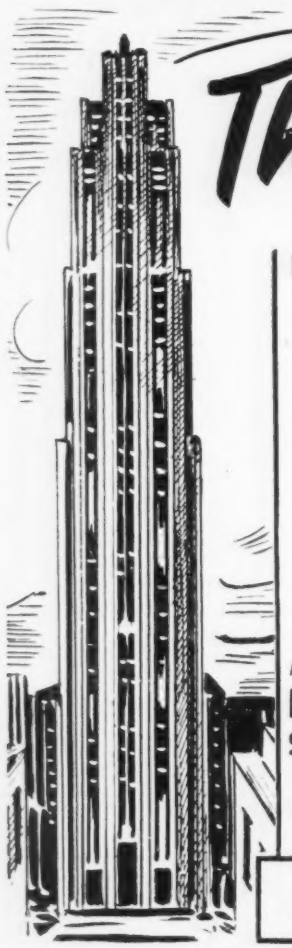
Eliminated with REFINITE Conditioned Water



Uneven and otherwise unsatisfactory dyeing may be attributed to a large extent to raw, hard water. In the case of wool, when the scoured wool is ready for the final washing, it enters the bowl still containing an amount of soap matter to be washed off. If hard water is used, fatty matter will be converted into insoluble calcium and magnesium soaps, and will remain on the wool. These will act as resists and prevent the proper fixation of the color. Uneven dyeing . . . any trouble you may have, caused by raw, impure water can be eliminated with Refinite Conditioning equipment. Let Refinite analyze your water problems. Write Refinite today. There's no obligation.

The Refinite Corporation

107 Refinite Bldg., Omaha, Nebr.



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RADIO CITY

Famed the world over is New York's Radio City—a "city within a city."

Diastafor de-sizing agent is famous, too—famous for the wonderful performance it always gives. 36 years of satisfactory results have made Diastafor the favorite of chemists and mill-owners through the nation.

Diastafor avoids costly errors and affords you economy through its uniform high quality performance.

For further information ask our technical man or write to

FLEISCHMANN'S DIASTAFOR
Standard Brands Incorporated
DIASTAFOR DIVISION
40 WORTH STREET • NEW YORK 13, N. Y.

DIASTAFOR
36 YEARS OF SATISFACTORY RESULTS

to increased production without extra manpower. Major phases of wage incentives are treated in this manual, such as how to choose a plan to fit your plant, how to get War Labor Board approval; how to install the plan, how to keep it in scientific operation.

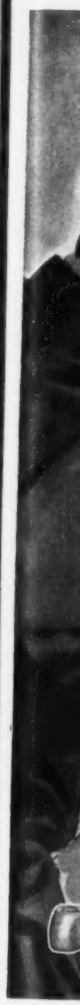
10. Mercurial thermostats are discussed in a bulletin being offered by Bender Scientific Glass, Inc. The straight type and the angular type of thermostats are illustrated and described.

11. Treatment of renegotiation refunds in the current financial statement of contractors and sub-contractors subject to the provisions of the War Profits Control Act is covered in the December issue of *Accounting Research Bulletins*, being offered by the Committee on Accounting Procedure, American Institute of Accounts. The information contained in this bulletin should prove to be of value to all textile executives, operating on war contracts.

12. Instantaneous fluorescent starting with Model MF-240-N is covered in a bulletin offered by The Fostoria Pressed Steel Corp. Operating characteristics, methods of mounting and other features of this lighting unit are mentioned.

13. "A New World," is the title of a booklet offered by United States Testing Co., Inc., in which the part that testing laboratories will play in the post-war world is covered. Textile executives will find that portion devoted to the subject of textiles of great interest. It is pointed out in this article that the testing company has at its finger tips the technical knowledge and records of the past and present covering the many newly discovered fibers, fabrication methods and processes.

14. "Facts About Plastics," is the title of a 24-page non-technical booklet just released by the Richardson Co. This booklet lists the properties of various plastics and their application to a wide range of present and postwar uses. The limitations of plastics are also covered. The two main groups of plastics, thermosetting and thermoplastic are described and illustrated and also a special section is devoted to laminated and molded plastics.



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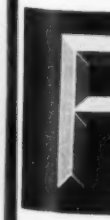


Will it just "do," or...will it "DO THE JOB"

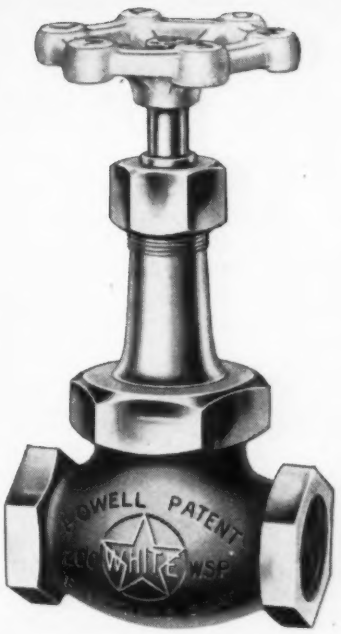


Fig. 1708—Bronze Globe Valve for 200 pounds W.P. Has screwed ends, union bonnet, renewable seat and regrindable, renewable hard bronze semi-cone plug type disc. This valve is especially suitable for throttling service.

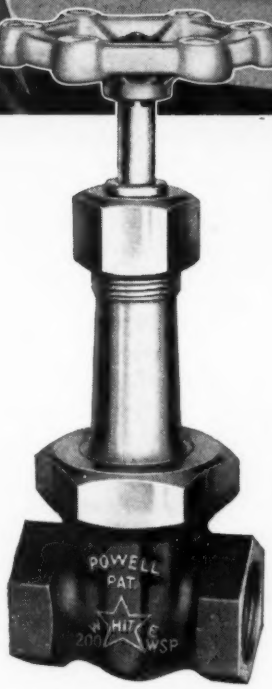


Fig. 375—Bronze Gate Valve for 200 pounds W.P. Has screwed ends, union bonnet, inside screw rising stem and a special hard bronze disc.

"There is a valve that will *"do"*—or "there is a POWELL Valve that will *do the job*"—what a vital difference in meaning.

But as long as you have POWELL Engineering at your service, you'll never have to make a valve "do"—because POWELL not only has a complete line of standard valves as listed in our general catalog but—POWELL Engineering is ready at all times to offer *specialized* service.

Shown here are three of POWELL'S complete line of Bronze Valves. These valves are correctly engineered in every detail for controlling the flow of low-pressure steam, oil, water or gas.

The Wm. Powell Co.

Dependable Valves Since 1846

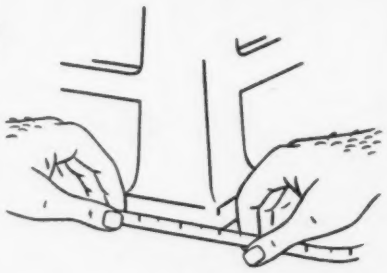
Cincinnati 22, Ohio

Fig. 500—Bronze Gate Valve for 125 pounds W.P. Has screwed ends, screwed-in bonnet and inside screw rising stem. Sizes ¼" to ¾" are equipped with taper wedge solid disc; sizes 1" to 3" with taper wedge double disc.

POWELL VALVES

ON YOUR MARKS

Send Felters a brief description and weight of the machine, measurements of the base or feet. Felters will send by return mail Unisorb pads of the proper density and size—exact fits for your marks.

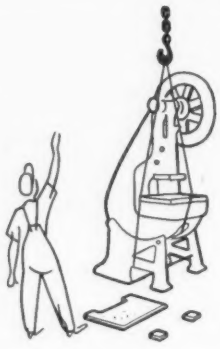


GET SET

Cover both sides of the Unisorb Felt Pads with Eagle Brand Cement.

MOVE IT WITH FELTERS UNISORB

Then place the Unisorb Felt Pads over the floor marks, set the machine on floor. That's all there is to it.



NO BOLTS . . . NO SEAMS . . . NO DAMAGE TO FLOORS

Just follow the simple directions under the illustrations for the easy, time-and-money-saving Felters way to relocate one machine or a dozen. With the Unisorb method of machine relocation, no holes need to be located and drilled, no bolts and hold-downs supplied and tightened.

Also, when you set machines on Felters Unisorb, you dampen machine vibration and noise, reduce wear and repair, increase workers' efficiency by decreasing fatigue—and you improve your output.

Have you received your copy of the new Felters Booklet, "Unisorb in the Industrial Plant"? This new book gives more quick facts and figures about the advantages of relocating machines the Unisorb way. We will be glad to send you a copy at once. Simply write.

The Felters Company

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Offices: New York, Philadelphia, Chicago, Detroit • Sales Representatives: Dallas, Los Angeles, Nashville, St. Louis, St. Paul. • Mills: Johnson City, New York; Millbury, Massachusetts; Jackson, Michigan

News of the month

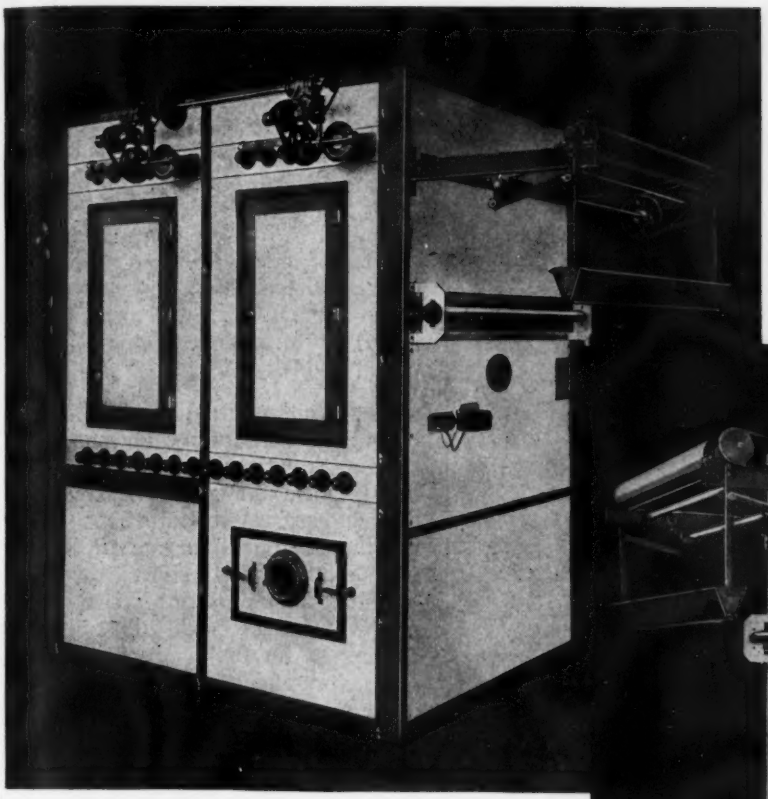
Textile Profit on Sales 3.5% to 7.8%. The Securities and Exchange Commission last month issued a survey of the profit before and after taxes of a group of listed corporations for the years 1937 to 1942 inclusive. For 1942 the 12 weaving mills covered reported 13.0% of sales as profit before taxes and 3.5% after. In 1937 the figures were 1.5% and 0.9% respectively. Five and six rayon companies reported 22.6 and 7.8 for 1942 against 15.6 and 13.1 for 1937; 11 and 12 hosiery companies showed 5.3% after taxes in 1942 and 4.2% in 1937; 14 and 15 carpet mills, 3.8 and 7.8.

The Wool Auctions. An auction of 30,000,000 lb. of foreign wool was held by Defense Supplies Corp. in Boston Feb. 17 and 18. Prices were generally 2¢ above upset prices and 5¢ below ceilings; some lots were passed. Domestic growers have protested the auctioning of foreign surplus and urge on Congress a unified plan handling all Government-owned wools, foreign and domestic, under the same policy. It was urgent that further auctions await a study of the stock-pile situation but another sale was held in Boston, Mar. 9.

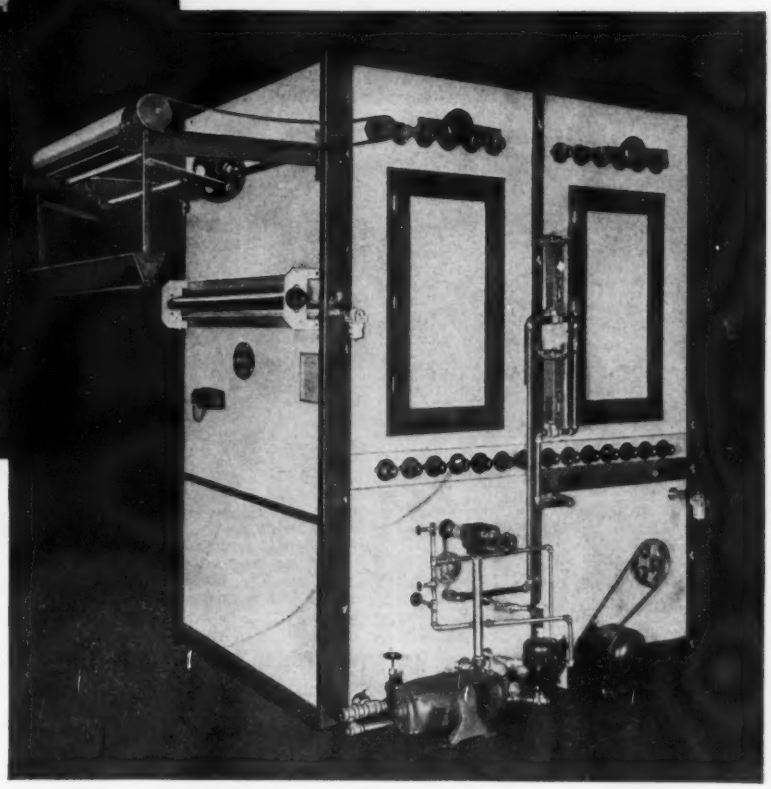
Acts to Increase Production. OPA and WPB have lately taken almost simultaneous action aimed to increase

WAR AND PUBLISHING

The manufacture of magazines has its share of wartime problems. We hope that old subscribers to TEXTILE WORLD will forgive our printer and the Post Office Department for the delays which occasionally occur in the receipt of their copies, as both are striving to do their best under the currently severe manpower and materials shortages. We regret that the paper curtailment requires so many new subscribers to wait to be put on the mailing list, but they have our assurance that they will be entered at the earliest possible opportunity.



Two views of the Hunter Cloth Conditioner — view at right shows conditioning apparatus including pump, automatic controls, fan, etc. Unit may be furnished optionally with Range Drive as shown.



How To Condition Cloth At 25 Yards Per Minute With Guaranteed Regain

THE Hunter Cloth Conditioning Machine pictured on this page is the newest Hunter contribution to better finishing.

It is a machine affording a new principle of restoring natural moisture content to cloth after finishing. It is setting new records for evenness, uniformity, flexibility and production. It demonstrates that the addition of moisture content improves quality by evening shades, and provides a natural soft handle. It brings the cloth up to its proper weight and proper balance between moisture and fabric.

The unit includes an enclosure through which the cloth passes in vertical runs. It has an integral air conditioning unit supplying conditioned air to the enclosure for treating the cloth.

The Hunter Conditioner can be built with a capacity to fit any individual need, although the units pictured are large enough for 95% of the woolen and worsted mills.

The productive speeds are anywhere from 15 to 25 yards per minute, with a guaranteed regain of 10% on the bone dry basis.

The Hunter Conditioner is so constructed that there is absolutely no free moisture within the enclosure. Only saturated air is blown over both the back and face of the cloth. The conditioned air is automatically controlled, both as to temperature and humidity, by certified instruments. The Conditioner is provided with means for warming the inside of the enclosure before the Conditioner is started, thus eliminating any risk of condensation.

The Conditioner is not only a valuable adjunct for improving the finish, handle and shade, but also is invaluable in assisting mills to bring underweight fabrics up to required weights. These machines have proven themselves in operation on such a wide range of fabrics as worsteds, rayon and wool blends, blankets, O. D. Marine and Naval cloths.

FOR COMPLETE DETAILS, SIMPLY WRITE

JAMES HUNTER MACHINE CO.
NORTH ADAMS, MASSACHUSETTS
FOUNDED 1847

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And to cut costs — AIR EXPRESS shipments should be *packed compactly* but securely, to obtain the best ratio of size to weight.

A Money-Saving, High-Speed Tool For Every Business

As a result of increased efficiency developed to meet wartime demands, rates have recently been reduced. Shippers nationwide are now saving an average of more than 10% on Air Express charges. And Air Express schedules are based on "hours", not days and weeks — with 3-mile-a-minute service direct to hundreds of U. S. cities and scores of foreign countries.

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textile production, as for example, the moves aimed to aid the shortage of bed sheets when OPA raised the prices and WPB required a production on par with first quarter of 1942. The lower-end bed sheets in particular are affected. Limitations were placed by OPA on the mark-ups due to processing of cotton and rayon piece goods aimed at increasing supplies of low priced goods.

The Denim Situation. Denim has become the hub of the low-end work clothing situation, but action by OPA in lifting the ceiling price of one mill's product has confused rather than clarified the situation. The garment houses now want higher ceilings on their products. The Vinson directive which permits these piecemeal adjustments is coming in for more criticism as unsatisfactory and unsound.

AATCC Research Program. Plans for a more extensive research program have been announced recently by the American Association of Textile Chemists & Colorists. The program includes the engagement of a director of research, an assistant research associate, two laboratory assistants, and a research secretary. To finance the program a budget of $35,000 a year was approved. Headquarters will probably be at Lowell Textile Institute.

Air-Conditioning. The role of air-conditioning in the textile industry was outlined by Dr. Willis H. Carrier, of Carrier Corp., at a recent meeting of the Toronto Section of the American Society of Mechanical Engineers. According to Dr. Carrier, air-conditioning with close humidity control is essential in production of synthetic fibers.

American Woolen Report. Despite a 3.7% drop in annual dollar volume of sales in 1943, the American Woolen

TEXTILE CALENDAR

American Association of Textile Chemists and Colorists, Piedmont Section, 20th Anniversary Meeting, Greenville, S. C., Mar. 25.

Southern Textile Association, S. C. (Weavers Group), Mar. 18, Spartanburg, S. C.; Master Mechanics Division, Charlotte, N. C., Apr. 6.

National Knitted Outerwear Assn., annual meeting and dinner, Hotel Astor, New York, Mar. 30.

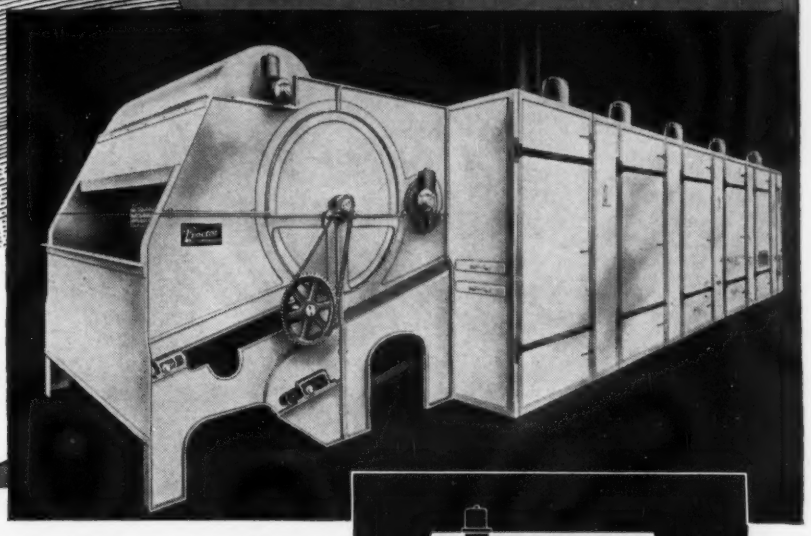
Industrial Fiber Society, Spring Meeting, Clemson College, Clemson, S. C., Apr. 14-15.

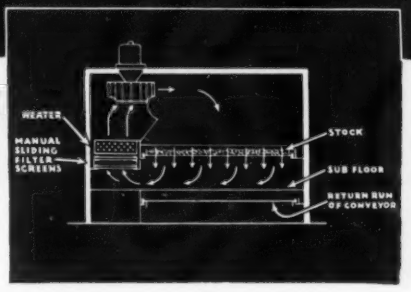
Hosiery Conference and annual meeting of N.A.H.M., Waldorf Astoria, New York, Apr. 20-21.

National Cotton Week, May 22-27.

IMPROVE QUALITY WITH THE

PROCTOR IMPACT DRYER *for* WOOL STOCK





(Above) The Proctor Impact Dryer for Pulled Wool in the Grease, Scoured Wool, Neutralized Wool after Carbonizing, and Shredded Rags, viewed from the feed end. (Right) Cross section illustrates unique method of air circulation, explained fully below.

In addition to the many important economies made possible by increased production, the quality of wool dried in the Proctor Impact Dryer is much superior to that obtained from older machines. Due to the careful control which is possible with this machine, plus the unique method of air circulation, stock goes through this dryer at a faster speed and is therefore subjected to heat for a shorter period of time. Heated air, impinged intermittently at a high velocity on the material, as it is conveyed through the dryer, agitates the stock, keeping it in constant motion during the entire drying process. This assures the quick, uniform drying of the material, on top, bottom and all the way through... and results in the new, high quality of the stock produced by this dryer.

NOW IS THE TIME

It is none too soon for you to be giving careful consideration to your postwar equipment needs. A little time-out now will undoubtedly save you a considerably more costly "time-out" period when the conversion comes. Now is the time to let Proctor engineers assist you in planning for the new machinery that will help you increase your postwar profits.

PROCTOR TEXTILE DRYERS

Manufactured by

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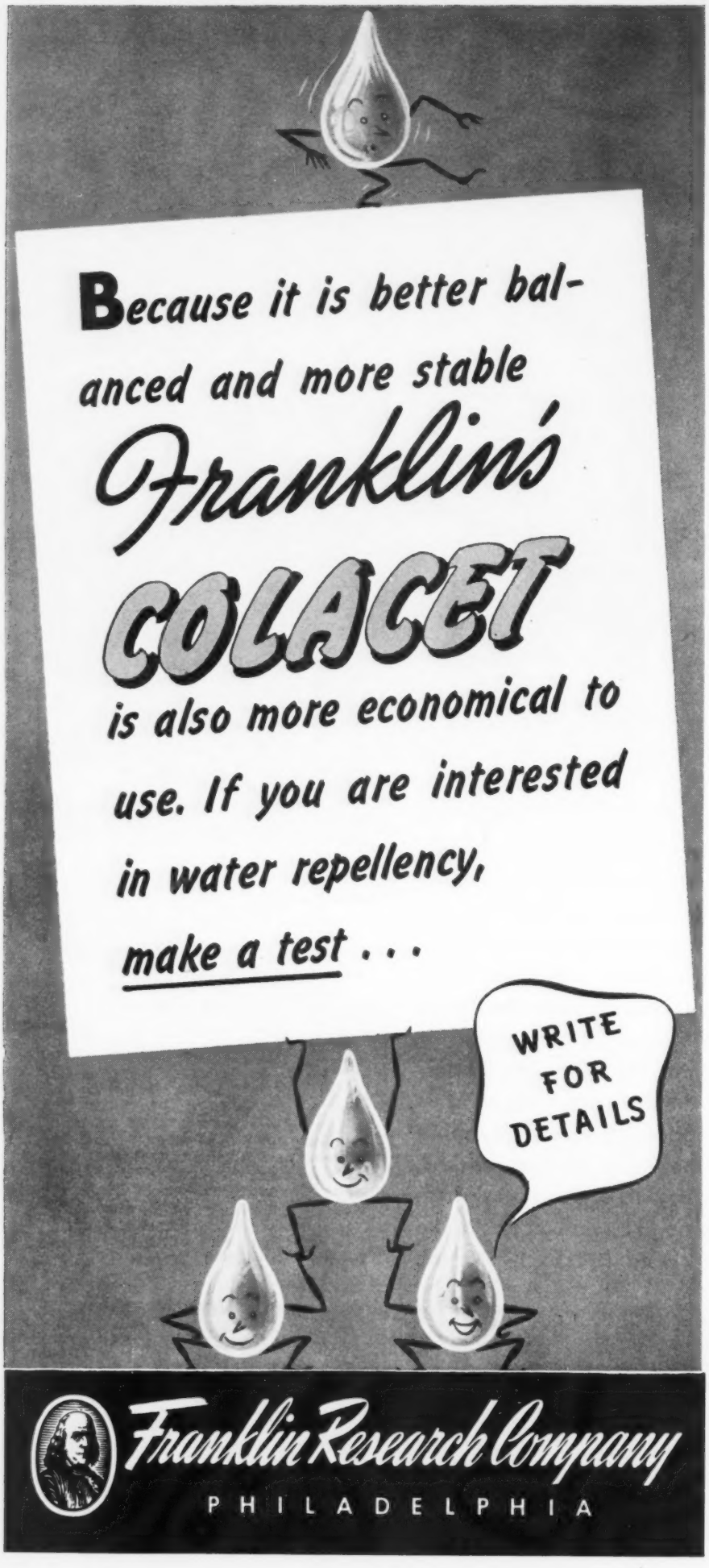
Because it is better balanced and more stable
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COLACET
is also more economical to use. If you are interested in water repellency,
make a test . . .
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PHILADELPHIA

NEWS OF THE MONTH

Co. was able to record a 13.5% gain in net profit according to its financial report issued last month. Sales totaled $197,505,136 in 1943 against $205,181,461 in 1942; net profit after all charges and reserves was $5,475,421 for 1943 against $4,823,831 for 1942.

Cotton Consumption Down. January cotton consumption at 819,489 bales is the smallest for any month since February, 1941, and more than 18% below the all-time peak of 1,000,000 bales in April, 1942.

Mexican Styles Featured. Typical of the rising interest in Latin America is the current style offering by Marvin Textile Associates, New York, which stresses Mexican colors and styles in its new line of converted rayon, woven by Susquehanna Mills. A fashion movie in technicolor has been prepared.

Markets Are Listless. Cotton goods were unsettled by further M317 amendments on Feb. 21, and trading has been sluggish. Wool goods mills are offering new lines and alloting yardage among customers; Army wants large quantities for spring delivery. Rayon for civilians is steadily tighter; export and military needs are growing. Hosiery for women moves steadily; half-hose tight with continued Army demand. Underwear men see little light on civilian production, and are allocating their small available output.

This and That. The proposed American Glove Manufacturers Institute has held several meetings recently and has signed up 88 firms; Edward Gerhardy of Hansen Glove Co., Minneapolis, is chairman . . . C.T.I. has issued the third edition of "Cotton From Raw Material to Finished Product." It contains 15 statistical tables and 94 swatches of fabrics as well as the story of the industry . . . Pepperell Mfg. Co., Boston, was incorporated just 100 years ago, Feb. 16 . . . Procurement of Army socks by QM will be specified as pre-shrunk . . . Saran yarns are now being used in tow targets by the Army Air Forces . . . Army shorts are being made of silesia linings, replacing broadcloth formerly procured for such purposes . . . A new sheet plastic called V-Film has recently been developed by Goodyear . . . To curb mark-ups of cotton and rayon fabrics based on extra finishing costs, OPA issued an amendment MPR127 which became effective Feb. 25 . . . Textile Research Institute will establish research headquarters at Princeton, N. J. . . . Army has returned seven Fall River mills to private owners . . . WPB weighs 48 hr. week for all cotton mills.

Now Ready

Your Copy of "W&G" LOCKSTITCH Instruction Book

Showing a few sample pages of the book. It contains half-tone illustrations, line drawings and a wealth of information for learners as well as for experienced mechanics.

Here is relief from the War time shortage of skilled mechanics and the scarcity of spare parts.

We have spent thousands of dollars in the production of this 100 page book to show you how to operate, service and repair the "W & G" Lockstitch. It contains over one hundred illustrations and tells you everything you wish to know about this machine. In fact, we believe it to be the most complete instruction book that has ever been published for the industry.

The book is priced at one dollar but is FREE to users of "W & G" Lockstitch Machines. Write for a copy on your company letter head to either our General Offices or to the nearest Branch.

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● Assuming the great task of supplying the largest Armed Force in the world plus the civilian needs, the textile industry has further advanced its manufacturing technique, production facilities and personnel.

With these progressive steps, the matter of adequate and sanitary washing facilities has had attention,—and as in our other leading industries, Bradley Washfountains have been selected by many prominent mills.

MANY LEADERS USE BRADLEYS

Such mills as Cannon,—Pepperell,—Cluett, Peabody,—Pacific, Avondale, Industrial Rayon, Celanese—and hosiery mills as Kayser, Phoenix, Real Silk, Shannon Hosiery have their employee washrooms equipped with Bradley Washfountains.

Bradleys serve 8 to 10 persons simultaneously from a central sprayhead, taking the place of 8 to 10 "single-person" wash basins, cutting water consumption by 70 per cent, reducing piping connections and eliminating entirely the multiplicity of faucets and their maintenance.

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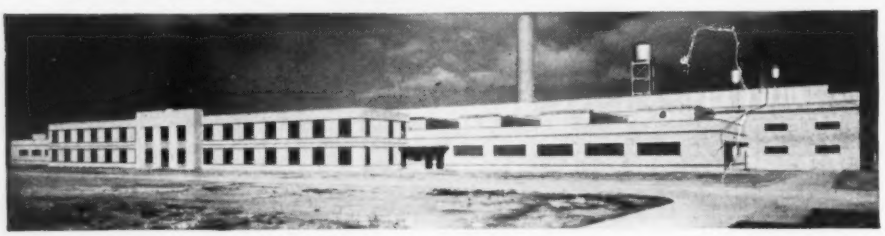
Modern plants like this—Industrial Rayon Corp.—gain efficiency and improve employee morale with Bradley Washfountains and Multi-Stall Showers.

BRADLEY washfountains



(Continued from page 128)

is almost always done separately and carries an increased rate, the general practice is to run together first quality and second quality without regard to proportion. This introduces a variable that shows up first in the number of restarts, more commonly called breaks or ends down. For listing all of these factors a form similar to that illustrated herewith is helpful.

In plants that standardize operator practices and just what constitutes a skein-winding job, there remains only the variable of breaks to be considered. In such plants only a change in ends down necessitates a revision of rates. This means that if the number of breaks for a standard skein increases from 0.25 to 0.60 unquestionably a change in rate must be made if the breaks cannot immediately be reduced.

Thus a plant can know at all times the quality of its skein yarn as reflected by the break factor. A sudden increase does not necessarily mean poorer raw yarn. In a throwing plant it more often indicates that something has happened in the soaking department: Skeins hung inside out, rough handling, or damage caused by equipment.

Following is a tabulation of the breaks per 1000 yd. that could be expected on the yarns mentioned in the inquiry. They are based on the skein lengths stated—shorter lengths would be relatively less; greater lengths, more.

Den.	Qual.	BREAKS Normal	Good
75	1st.	.015	.010
75	2nd.	.025	.018
100	1st.	.020	.015
100	2nd.	.022	.020

Bear in mind that the foregoing is expressed in breaks per 1000 yd. It is generaly assumed that 75 den. winds worse than 100. That is true expressed in breaks per skeins of equal weight but is rarely true on the more fairly comparable basis above.

Weaving 9-Oz. Sateen

Technical Editor:

In your January issue we noted an interesting article describing the manufacture of 9-oz. sateen, Type I. We are contemplating weaving this material in Type II and shall appreciate it if you will send us information on weaving that type. (8975)

Type II, 9-oz. sateen, covered by Specification PQD 245-D, is a 4-har-

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GOOD VALVE CARE is just good business

NOW, especially, when the demand for valves is taxing deliveries, it is imperative that you make your present valves last longer and serve better.

It's a challenge to every maintenance man to keep an eagle eye on the valves he now has in service . . . to see that they are checked and serviced regularly and thus forestall, as far as possible, the need for new valves.

Lunkenheimer Valves are easy to keep in good condition. Simplicity of design, with a minimum of working parts, makes them readily accessible for inspection and maintenance follow-up.

Let your Lunkenheimer distributor help you with your maintenance, repair and operating problems. His facilities and experience are at your call.

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It fits perfectly . . . .

One body takes either the rising stem or non-rising stem trim assembly. A timely feature when it's necessary to convert from one type to the other. Simply loosen the trim assembly and lift out. The body remains in the line.

Bronze Double Disc Gate Rising Stem

Bronze Wedge Disc Gate Non-rising Stem

LUNKENHEIMER VALVES

ness crow-foot weave, as contrasted by the Type I which is a 5-harness satin weave. Type II is specified with 116 ends per inch and 64 picks per inch, with breaking strength in warp of 160 lb. and in filling of 120 lb. The following gray construction should be approximately correct for Type II: Loom width 40 in.; thread count 112x 66; 1.60 yd. per lb. Further details regarding the manufacture of the yarns, finishing details, and tests applicable were given in September, 1943 issue of TEXTILE WORLD in Part VIII of the Manual of Military Fabrics.

Predetermining Costs of Worsted Yarn

Technical Editor:

At present time we are trying to arrive at a cost figure for our 1944 woven fabrics. We have just started our Bradford worsted spinning mill, and are having considerable difficulty predetermining our yarn costs. We shall be spinning the range from 1/17s to 2/48s. Of course you understand we have not spun all our counts yet and that is just the reason we are encountering much difficulty in predetermining our yarn costs. However, this is our problem—taking as a basis of cost 1¼c. per count. Would our cost per count stay at 1¼c. from 1/17s to 1/46s? Or, would the cost per count start to increase before or after we reach 1/28s or 1/30s. For example, at 1¼c. per count 1/20s would cost us 30c. per lb., 1/26s would cost us 39c. per lb. Now, would we figure on 1¼c. per count for our 1/46 or 1/48 which would bring the costs to 69c. and 72c. per lb. respectively? Or, should we raise the cost to 1¾c. or 2c. per count after reaching 1/36 or 1/40s? This is a very serious problem to us and would appreciate your getting the opinion from several worsted spinning men. (8952)

Many mills calculate the cost of any count under 20s on the basis of 20s and do not make any allowance for heavier counts. However, it has been pretty well established in the industry and recognized by the O.P.A. in establishing selling prices that the manufacturing costs per count increases with finer yarns. Although it would be impractical to attempt to advise any individual mill what their differential should be, we are giving you below a schedule which may serve as a guide:

2/20s to 2/28s	$0.0100
2/28s to 2/34s	0.0125
2/35s to 2/42s	0.0150
2/43s to 2/50s	0.0200

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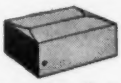

for packaging Small Arms Ammunition

for insulating Armored Tanks

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for sizing duck Gun Covers

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for binding sand Molds & Cores used in casting Gun Mounts, etc.

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Number 2 of a Series

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In no other war agency could a deadline failure in the production or shipment of needed guns, ammunition and automotive equipment mean so much to the safety of our boys on the battlefronts, and to the cause for which they are fighting.

National is proud of the high trust that is placed in its adhesives and starch products for such vital war applications as those shown at the left . . . and eager to give first call on its research, service and production facilities to the needs of our armed forces.

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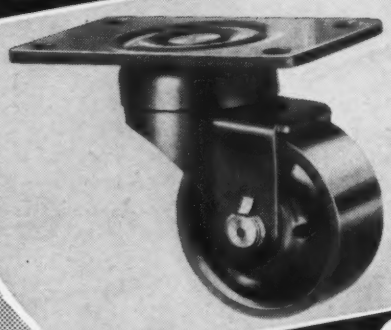

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Write FOR NEW 192 PAGE DARNELL MANUAL

(Continued from page 126)

livered equals the percent draft. C maintains that the actual drawing out or drafting of the yarn after the drawing rolls have stopped delivering roving constitutes the draft.

I should like to learn, through the columns of The Round Table, how other mill men figure percent of draft. (R-34)

The Human Element In Testing

Referring to the Round Table discussion in November issue on, "Method of Improving Fabric Break," and subsequent discussion aroused, the writer feels compelled to enlarge on one point referred to indirectly.

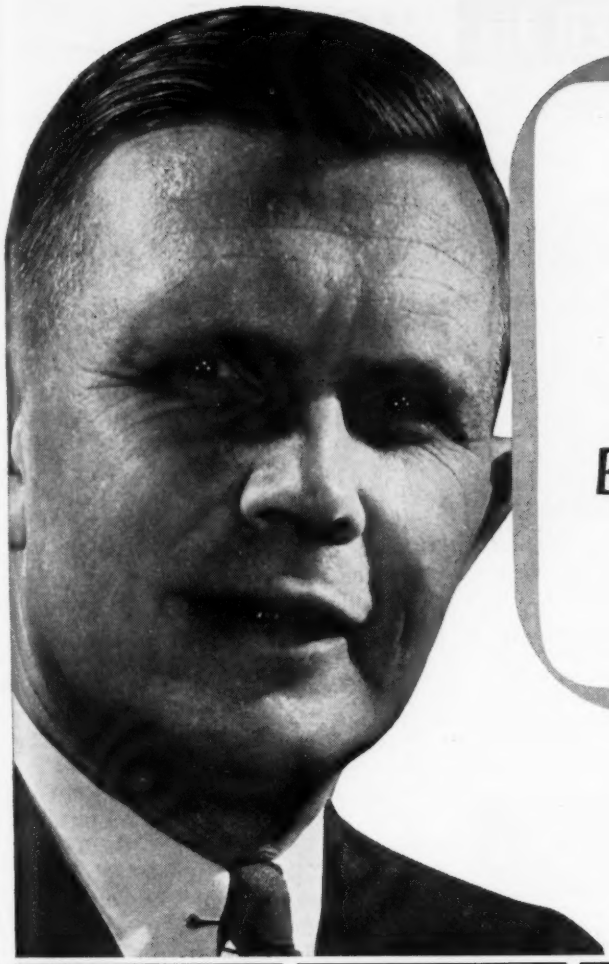
It doesn't matter how new or how perfect the machine operates if the operator has not been properly trained. Unless he knows how to test and has a special aptitude for such work, he can never approach or attain testing perfection. The writer feels that the tensile strength can not be improved on a testing machine, but much can be done in destroying cotton's inherent characteristics, and in preventing one obtaining the maximum or true tensile strength.

Acquiring the knack or art of testing can probably be expressed best by comparison with the development of a good batter in baseball. The aspirant must live and think baseball, develop the right muscles in hands, arms and shoulders. Most of all, he must exercise good judgment.

The tester must get in the proper position beside the machine from where his vision will not be obstructed when looking down on the fabric being inserted into the jaws of the machine. Insert the fabric between the jaws with both hands, align the jaw of head end with the parallel lines marked on sample. (4 x 6 in. Grab Test, A.S.T.M. No. 2). Then screw the jaws together with right hand and tighten jaws with both hands. Repeat the same operation with the jaws on the pulling head.

The item of correct pressure is a matter of judgment or feel dictated by trained muscles. Before starting the machine, put just enough pressure on the jaws to hold the sample securely, but not enough to cut the sample at the edges of the jaws.

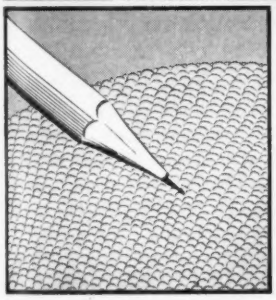
First thought is how is one to know how much pressure to apply or when enough has been applied. The whole



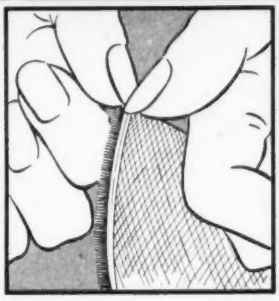
UBATEX

"Use LATEX for BACKING, COMBINING and COATING"

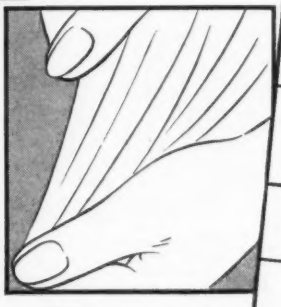
"AND DO THE JOB BETTER"



• When used for Backing, Ubatex locks the pile firmly to the fabric base.



• In Combining operations, Ubatex provides a positive, one-coat bond.



• When used for Coating, Ubatex develops a tough, flexible, contiguous film.

UBATEX CHARACTERISTICS	
Chemical Description	A water dispersed, plasticized polymer with unusual latex-like characteristics.
Ageing	Definitely superior to latex — reaches maximum strength at room temperature, making heat treatment unnecessary.
Film Strength	Ample for all backing, combining and coating operations so far tested.
Drying Speed	Slightly slower than latex but faster than all other synthetics we have tested.
Setting Speed	Grab is quicker than with latex.
Pressure Sensitivity	Negative.
Color	Naturally clear. Does not stain. Can be pigmented or dyed.
Luster	Excellent sheen.
Laundering Resistance	Appears to stand up well.

An original development of the UBS Laboratories, Ubatex is a completely synthesized latex (not a dispersed resin compound) that appears and handles similar to unvulcanized latex. Definitely superior to latex in its ageing and waterproof qualities, Ubatex is proving ideally suited for many backing, combining and coating operations. Write today for an experimental sample — describing materials and application methods involved.

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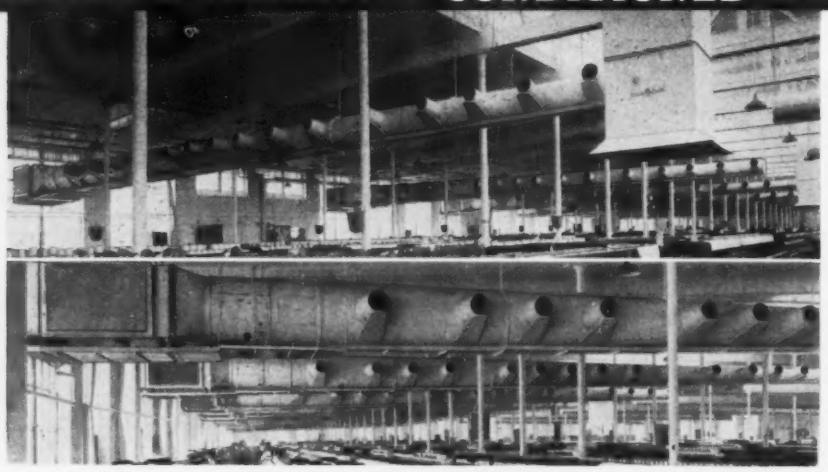

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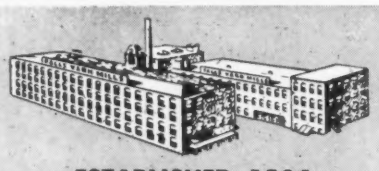

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secret of the art of testing is tied up in these answers. The tester depends upon his muscles in hands, arms and shoulders to indicate when this point is reached. Further, to complicate matters, each construction and weight fabric requires different amounts of pressure. Infinite patience and practice under expert instructors are necessary to gain this experience.

Yes, the development of the right muscles or feel is the secret to art of testing. As the fingers are clamped on the wheel tightening the jaws, tension is put on the wrist, muscles in lower and upper parts of arms, shoulders and parts of the back. To those who want to know just which muscles are referred to, try testing 12/O duck for a couple of hours. The next morning you will know.

Take the example of a 32-oz. belt duck, referred to in original discussion. A series of tests were made by two testers, one being an expert using the above method of pressure and the other applying all the pressure at once. The expert averaged a reading for warp breakage of 615 lb., the other 532 lb., a difference of 83 lb. How many of you laboratory men have found this difference?

To explain how to get the maximum or true tensile strength can best be explained as follows: Clamp down on the fabric a moderate amount, making sure it will not slip in the jaws. Apply the load. Keep eyes on sample and as the crimp is pulled out of the fabric, gradually add more pressure to the jaws on the head end and then to the jaws of the pulling end. Watch the sample all the time. Do not let the sample slip in the jaws, then apply the pressure so the jaws will grab the sample, increasing the rate of load.

The writer feels that members of A.S.T.M. can get together and agree on a procedure to instruct its members in the proper ways to test.

We just can't get away from the human element in testing. The war has altered the personnel in many laboratories. We have new people testing, some are careless which is an added reason why the tester should be given more attention and instruction. In the last fifteen years, testing has been on a mass production basis. The testers routine has been reduced to the actual operation of machines, therefore he is regarded as a machne and not as an artist performing a highly skillful operation. It may be necessary to revamp the entire personnel of our laboratories to place them on a higher scientific plane in order to make such work more attractive.—R-37

PRICE CUT

You can cut the price you pay for water repellents in one of two ways. You can pay a lower initial price, if you can get it. Or, you can pay a reduced final price, if you can get it.

For example, if you use a water repellent that helps your sales, then, such a repellent, when all the costs are in, will cost you less than one that doesn't help your sales very much.

Initially, the cost of "Cravenette" water repellents is comparable with that of ordinary repellents; but everyone, everywhere knows "Cravenette"; it means more, a great deal more, when you come to sell your fabrics. Why not give yourself that benefit?

"Cravenette" water repellents have always been the standard in the trade for high quality. "Cravenette" repellents are easy to apply, either from a washer or a standing bath. Of course, they are accurately compounded, liquid at high and low temperatures, and stable under variable conditions over a wide range of temperatures. Odorless, too, and the effect on feel and finish of fabrics treated is what you want.

Your fabrics, treated with "Cravenette" water repellents, will be more acceptable at every stage from mill, to converter, to manufacturer, to merchant, to the public, if they have the help of the "Cravenette" tag or stamp or label.

Possibly sales are no problem at the moment, but this is a good time to begin preparing for tomorrow. Have us give you all the facts about "Cravenette"—now!

Your fabric treated with

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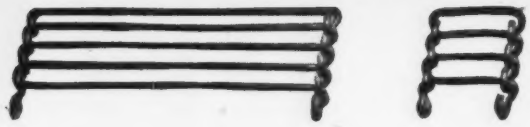

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But our research and development work is still going ahead and you will profit by its results in greatly improved machines for yarn throwing, as soon as peace returns.

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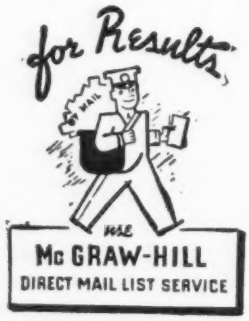

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MERINO YARNS FOR ARMY SOCKS

(Continued from page 93)

possessing worsted equipment may purchase top and process accordingly.

YARNS ON WORSTED SYSTEM. Two yarns being produced on the worsted system are a 1/18s, which is used as the body or leg yarn in the cushion-sole sock, PQD No. 236E, and a 1/30s which is used as the body yarn for light-wool socks, PQD Nos. 334B and C.

The following organizations, given for 1/18s Merino yarn, are typical of those employed by worsted mills manufacturing these yarns.

The first operation differing from the standard worsted system is at the first gill box, where a melanging gill is used for introducing the cotton sliver. Two special heads are used for the cotton and two ordinary heads for wool. The ribbon from all four heads are joined into a single end weighing about 640 grains per yard and containing 50% cotton and 50% wool. A draft of 4 is used on the cotton heads and a draft of 6 on the wool.

In the last finisher, a doubling of 3 is given for the 1/18s and a doubling of 2 for the 1/30s.

At spinning, the 1/18s is given a draft of 9 and 9 t.p.i. added. The 1/30s is given the same draft, but 13.8 t.p.i. are placed in the yarn.

COTTON SYSTEM OF YARN MANUFACTURE. One mill, operating on the cotton system, produces yarns of the same counts for use in light-wool and cushion-sole socks as follows: Both the cotton and the wool are processed separately into sliver, as indicated in chart. The wool is carded on two-cylinder worsted cards, run through a set of gill boxes, combed and regilled.

Cotton slivers and wool slivers are mixed at drawing frames, and two addition drawing processes given to produce a 60 grain sliver. A long-draft slubber then produces 1¼ hk. roving which is spun into 1/18s yarn, worsted count (12/1 cotton count) from two ends of roving on a special long-draft spinning frame.

Sliver for 1/30s yarn is brought from the drawing process weighing 50 grains per yard and is processed into 3 hk. roving on long-draft slubbers. Two ends of roving are spun into 1/30s worsted count (20/1 cotton count) on special long-draft frames. The yarns are well slubbed on double slubcatchers on the latest type of winders equipped with paraffin attachments and then wound on cones for shipment to knitters.

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SPECIAL DELIVERY FOR BERLIN! Night after night, day after day—a once proud nation is feeling Allied wrath as bombs drop on Germany!

SPECIAL DELIVERY—U.S.A.! After the war, fast planes will speed across the country and around the world—dropping huge parachutes that carry the mail!

Today . . . Solvay is supplying alkalies and related products for the manufacture and equipment of bombers, fighters and air transports—helping to weld a great and growing air force to pave the way for the coming invasion of the Continent and for the destruction of Hitler's Germany! In war as in peace Solvay Alkalies serve the nation.

Tomorrow . . . Solvay will key its production to the far-reaching possibilities of aviation in passenger and freight transport. Solvay with its broad background of long experience and research will keep in step with these developments . . . and, in the years of postwar progress, industry can look to Solvay for quality alkalies!

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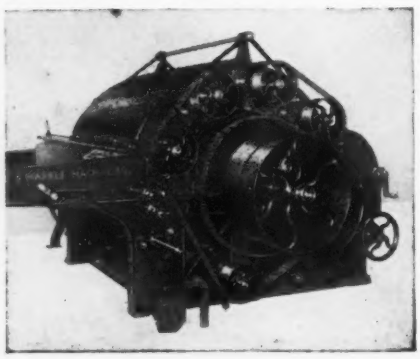
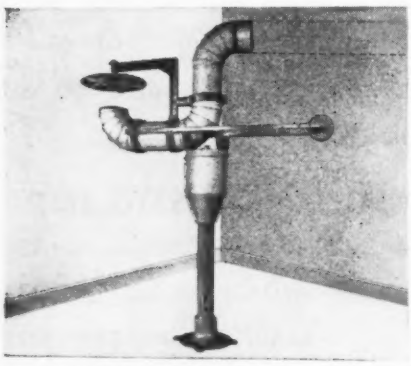
The use of this Feeder insures a more uniform and continuous feeding of the stock at the desired rate.



FEARNAUGHT MIXING PICKER

Operates on the same general principle as in coarse carding. Made with either metal or wood covered main cylinder, workers and strippers.



TRUSLOW BLENDER (patented)

Assures a superior mixture of different colors, kinds and qualities of stock. Used with wool, cotton, asbestos and synthetic fibres.

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MACHINE COMPANY
WORCESTER, MASSACHUSETTS, U. S. A.

SAFETY FOR OILERS

(*Continued from page 98*)

the controlling mechanism padlocked. He should again report to the engineer when the work is completed, so that the lock may be removed and the machinery started.

When oiling with long-spout oil cans, it is sometimes difficult to locate a small oil hole. For such places, it is advisable to install oil cups with lids that snap open and shut. Use of such oil cups further improves lubricating conditions, since it keeps dust out of the bearings, thus preventing wear.

Loose pulleys, when practicable, should have oiling devices so arranged as to permit oiling in any position of the pulley, when machinery is shut down. Self-oiling loose pulleys are, possibly, a bigger safety factor than self-oiling bearings, because of the proximity of belts.

Guards are often provided with slides or doors for the convenience of oilers and repair men. In some installations, it is advisable that these apertures be locked and keys supplied to oilers and repairmen. Interlocking doors are extensively used on enclosures for cards, etc.; when the oiler opens the door, the machinery stops.

EXCESS OILING. A surplus of oil at bearings may cause serious hazards. Some of these are:

1. Slippery floors where oil has dripped.
2. Increased fire danger because of flammable dusts adhering to oil-covered shafts and bearings.
3. Excess oil dropping from bearing into apparatus, in which the presence of small quantities of oil would cause fires or explosions.

When an excess of oil cannot be avoided, it is good practice to provide drip pans. If, however, these are suspended beneath overhead bearings, they should be fastened securely. Accidents, and near-accidents, have resulted from these pans falling.

Sometimes engines and machines have built-in pans which return the excess oil to a common reservoir from which it is pumped back to the bearings. Cup-shaped collars on vertical shafts will prevent oil from running down into apparatus where it might cause serious trouble.

When it is necessary to fill the reservoirs of self-oiling bearings while shafting is moving, care should be used to avoid filling them to full capacity. While a shaft revolves, considerable oil is in the bearing around the shaft. When the shaft stops, much of this oil runs down into the reservoir,

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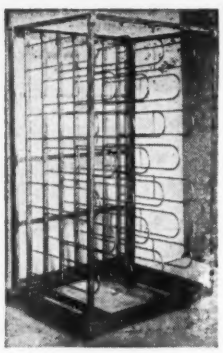

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Simplifies steaming of cakes and increases yarn handling efficiency.

Trucks made to order to fit your own ovens in capacities from 75 to 98 cakes. Polished brass arms hold and protect the yarn cakes. Strong easy rolling casters assure free movement of truck from oven to machines. What are your needs—Let us serve you.

Write for prices now.

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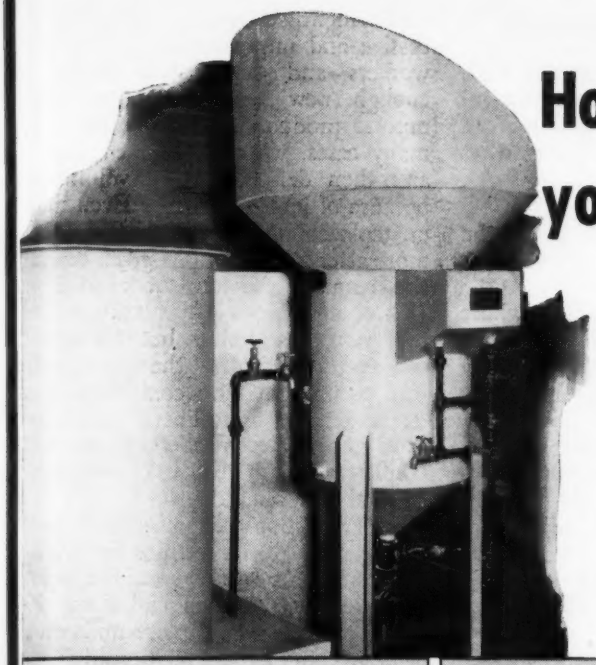
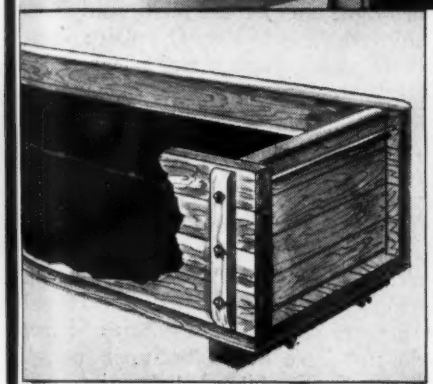
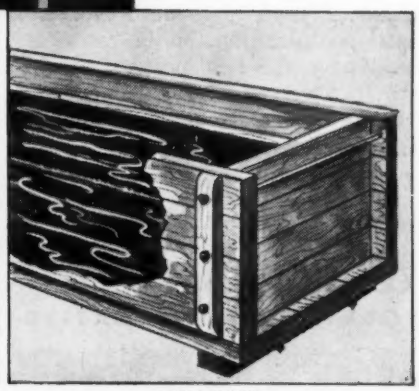
How LIXATE BRINE can help you achieve LEVEL DYEING!



1. GRAVITY WORKS FREE of charge for you in the Lixator, automatically producing *100% saturated* brine of *crystal clarity*. Mechanically perfect, the Lixator cuts costs, too—using 10% to 20% *less* salt; utilizing economical Sterling Rock Salt. Installation requires no heavy investment—International leases the Lixator to you for a very nominal sum. Here you see the Lixator installed by Classe Ribbon Works Inc. in their modern plant at Anniston, Alabama.

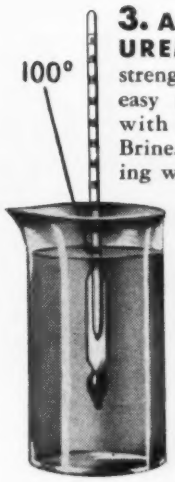


LIXATE BRINE



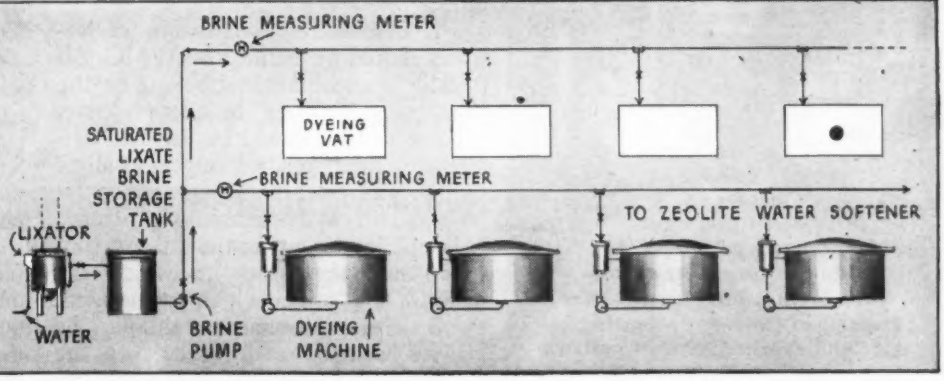
DRY SALT

2. LIXATE BRINE DISPERSES EVENLY throughout the dye bath. Being liquid, there can be no salt grains as in "dry salt" operations to cause local over-concentration. Lixate Brine eliminates spotting, streaking and white edges. Its crystal clarity, too, is your assurance against presence of gritty sediments or impurities which can cause off shades, spots and machine wear.



3. ACCURATE MEASUREMENT of desired brine strength in the dye bath is an easy matter when you start with *100% saturated* Lixate Brine. And a salometer reading will always give proof of Lixate's 100% saturation in contrast with ordinary brine. Make tests at any time—the brine is always saturated! A definite volume of brine draw-off always means a definite quantity of salt.

4. TURN A VALVE...
Lixate Brine is instantly on tap wherever you need it in your plant. There are no production interruptions; no labor wasted transporting dry salt throughout the plant. No labor is wasted, either, in producing *automatic* Lixate Brine. And you achieve these labor savings while cutting costs by using 10% to 20% *less* salt!



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The **LIXATE** *Process*
for making brine

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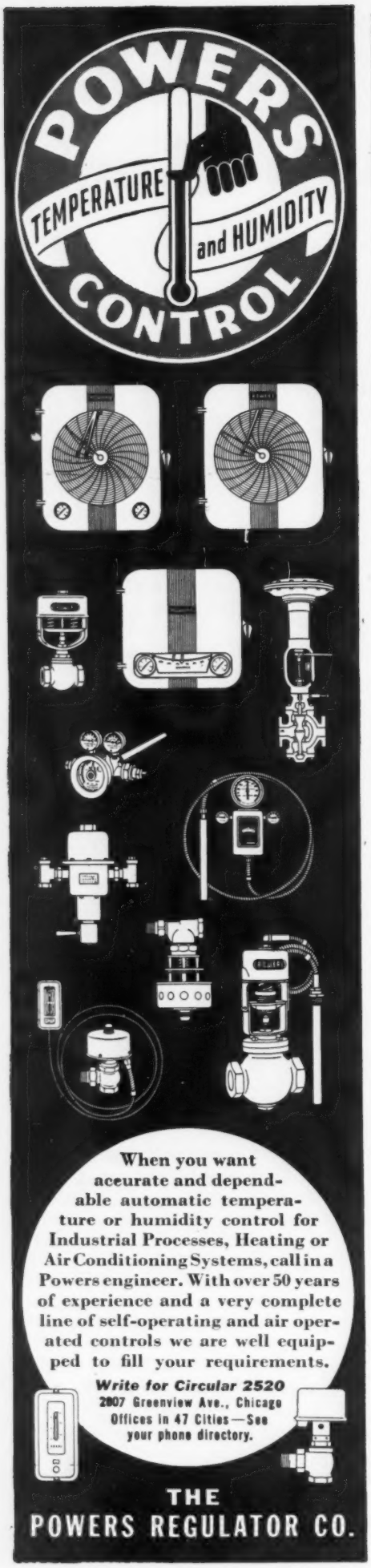
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POWERS REGULATOR CO.

and if the reservoir is already full, it will overflow.

Lineshafts can sometimes be kept free from dust accumulation by installing rings of cardboard, fiber, or similar material. If cut somewhat larger than the diameter of the shaft, they will travel back and forth between hangers or pulleys and keep the shaft clean.

CLOTHING FOR OILERS. Oilers whose duties require them to work close to moving machinery should be properly clothed for the job. Loose-fitting clothing increases the danger.

Use of high-pressure grease and oil guns, with their various patented connectors, introduces an element of safety; they make quick oiling and greasing possible and thus reduce the necessity for long shut-downs, and the length of time the oiler is exposed to danger.

Ladders used for oiling require special consideration, and every oiler should have the best possible equipment. Ladders used for oiling lineshafts are generally equipped with hooks at the top to hook onto the shaft and prevent slipping.

GREATER TEXTILE PRODUCTION IMPERATIVE

(*Continued from page 101*)

and do not direct attention to the essentiality of textiles.

RECOMMENDATIONS. Among other recommendations of the committee are:

1. Essentiality designations in textiles should be clarified by WMC. All textile occupations that belong on the critical list should be placed there. These textiles should be listed to designate their relative urgency along with requirements and production information. WPB should identify the specific fabrics giving the greatest concern and the plants in which the fabrics are principally manufactured.

2. This information should be given promptly and regularly to the field staffs of all Government agencies involved.

3. There should be prepared a selected list of mills for special attention and priority based on such factors as the proportion of high-urgency production in the mill; the over-all efficiency of production; the availability of labor in the area; the existence of alternate suppliers, etc.

4. Selective Service should be urged to give textile workers a better break. Many mills, especially those not on replacement schedules, report an excessive and unpredictable loss of key workers and supervisors. Even if enough new recruits are available, normal production is impossible. In many cases, workers classified in 1-A and then deferred, enlist voluntarily because of local criticisms. Even mills on replacement schedules believe that more attention should be given toward the temporary deferment of doffers. (Three of the companies visited have used women as doffers, but it is agreed women cannot carry the same work load as men). The committee also recommends a more liberal interpretation from Selective Service on mill employment for workers with agricultural deferment.

5. The group recognizes that wage increases should be certified by WMC when necessary. However, the point is made that it is doubtful if any increase possible would place mills on a favorable competitive relationship with shipyards and aircraft plants with their much higher wages which attract much of the available labor.

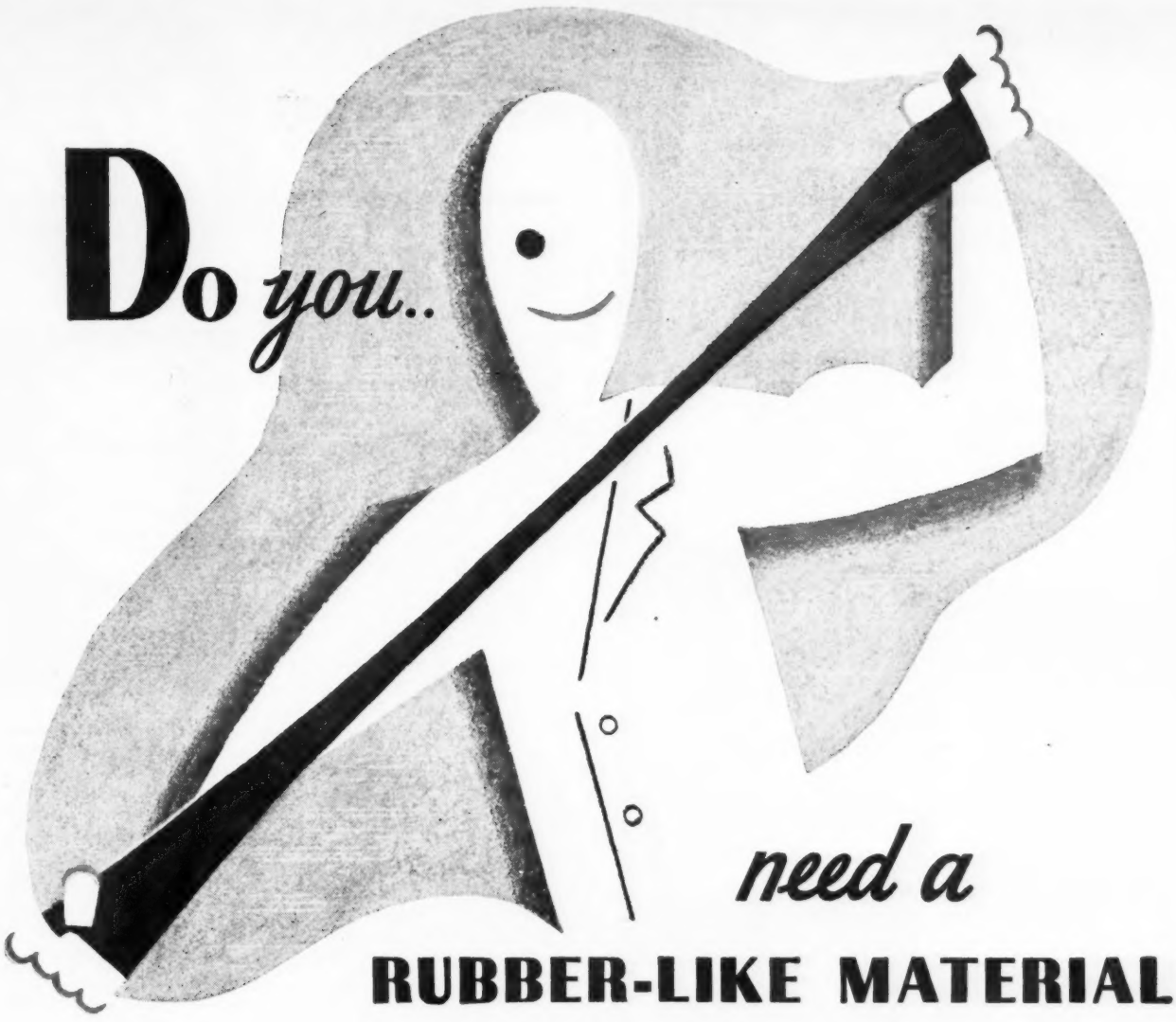
6. If possible, there should be in-plant and community studies for selected mills. It is suggested that utilization conferences be conducted for groups of selected small mills.

7. Study should be given to criticisms of Walsh-Healy requirements which prohibit girls between 16 and 18 years of age from working if they do not have a regular lunch period. Mill officials state that ample time is available for lunch but it has to be at staggered periods.

INHERENT DIFFICULTIES. In the over-all appraisal of what can be done to step up production in the textile industry, the committee took the realistic view that even if the complete program is put into action, there still remains the fact that within the first half of 1944, nearly 1,000,000 persons must be added to the Armed Services, coupled with a seasonal demand for nearly 3,500,000 more agricultural workers.

Also, the committee notes the fact that most mills are frozen now on constructions, which creates serious unbalance in production. Hence the conclusion that, while production can be speeded up, the output is not going to meet the expected 1944 requirements.

In view of this, the observers feel that further steps should be taken immediately toward concentrating bottleneck facilities and available manpower on the production of the more urgently needed fabrics and toward channeling these fabrics to the more urgent end-uses, in line with the mechanism already established by WPB for these purposes.



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For manufacturers who dip, coat or impregnate with rubber, or use adhesives or rubber-like materials, and are faced with a shortage of these products, we may develop for you a water-dispersed material to meet your requirements.

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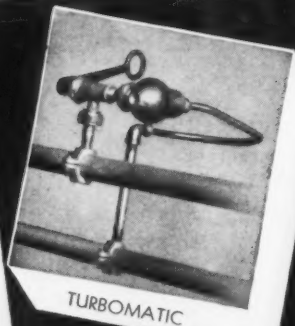
No Humidifier can possibly have Everything
Every Humidifier has Something

Certified CLIMATE

is applied engineering;
"something" for "something";
the right "something"
for the work you need
and want done.

HIGH DUTY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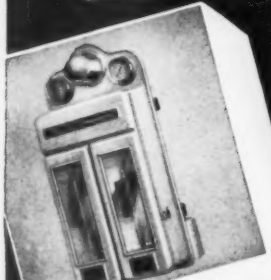
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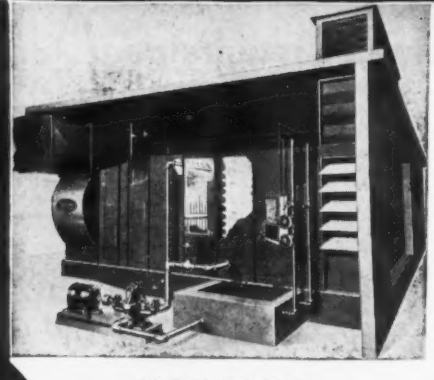
AIRCHANGER


CENTRAL STATION

Parks-Cramer Company
Fitchburg, Mass. Charlotte, N. C.

NEWS ABOUT *Men*

JOHN K. WHITAKER, president of Neuss Hesslein & Co. Inc., New York, who is leading the mobilization of the textile and general furniture industries in the Red Cross 1944 War Fund campaign.

Harry L. Bailey, lately president of Wellington, Sears Co., Boston and New York, was elected chairman of the board last month. **Charles A. Sweet** was elected to succeed him as president. **Charles O. Richardson** was elected vice-president and clerk, and other vice presidents are: **Richard G. Conant, M. P. Felton, W. O. Hay, Jr., F. A. Hillary, E. H. Johnson,** and **H. S. Grew, Jr.**

Col. Blake Ragsdale Van Leer, dean of North Carolina State University, has been elected as president of the Georgia Institute of Technology, Atlanta, Ga., and **Dr. M. L. Brittain** for 22 years in that office has been named president emeritus. Both changes are effective next July 1. Col. Van Leer is at the moment chief of the facilities branch, Army Specialized Training Division, Army Service Forces, Washington, D. C., and plans for his transfer have been cleared.

Sylvan I. Stroock, president of S. Stroock & Co., Inc., New York, was guest of honor recently at a dinner tendered him by the Board of Directors of the company to commemorate the completion of his fortieth year of service.

C. E. Trembly has been elected president of Englehart Woolen Mills Co., Albright, W. Va. **J. R. Englehart** was named secretary-treasurer and manager, and **G. A. Englehart,** superintendent.

J. Holmes Davis, chairman of the board of Spofford Mills, Wilmington, N. C., has been appointed by the National Labor Board as a substitute industry member of the WLB.

George M. Wright, president of Republic Cotton Mills, Great Falls, S. C., has been made a director of the Fifth Federal Reserve Bank for three years.

David C. Dick, O. B. E., prominent as head of the Cobourg Dyeing Co., Ltd., Cobourg, Ont., and Wool Administrator for the Wartime Prices and Trade Board of Canada, recently resigned as Wool Administrator owing to ill health. Since 1908 he has been actively associated with the Canadian textile industry. **Henry Brown,** deputy administrator, and for some years manager of Rosamond Woolen Co., Almonte, Ont., has been appointed Wool Administrator.

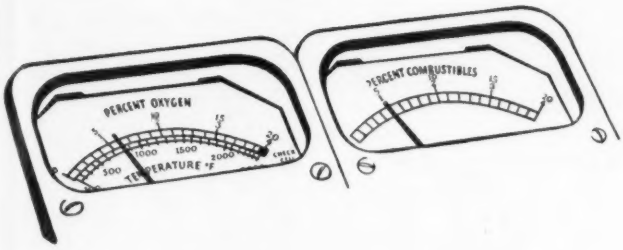
Joseph R. Walker, senior partner of Walker & Co., Boston, Mass., has been appointed head of the textile machinery operations committee, wool, cordage and machinery division of WPB. Mr. Walker retired in 1942 from the Walker Top Co., which he founded. He is noted for his pioneer work in the establishment of the wool top futures market.

Marvin R. Klarquist has been elected secretary and general manager of the Empire Worsted Mills, Jamestown, N. Y., succeeding the late Hjalmer Swanson.

Irby M. Goree, formerly of Chester, S. C., and more recently office manager of the American Yarn & Processing Co., Mount Holly, N. C., has been elected secretary and assistant treasurer.

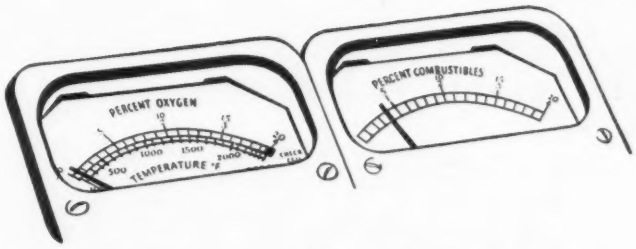
Charles H. Wood has been elected secretary-treasurer of Consolidated Textile Corp., New York, to succeed his father, M. H. Wood, who died

How to Control Furnace Atmosphere



Make this Test

Have a Cities Service Engineer, with the aid of the Industrial Heat Prover, take a test reading* of any combustion equipment in your plant. Note percentage of needless excess oxygen in the furnace atmosphere as registered on the Heat Prover dials.



See the Results

The Cities Service Engineer may then evaluate the Heat Prover analysis against his data and curve charts which are the Standard of Efficiency for the particular equipment . . . and make recommendations for correcting the defect—which in this case would reduce excess oxygen to ½%.

THE CITIES SERVICE HEAT PROVER reveals the degree of waste caused by air deficiency (excess fuel), or the degree of waste caused by dilution (excess air). Through unique means these conditions are measured directly on the two Heat Prover dials . . . one indicates the percentage of unused combustibles, and the other the percentage of excess oxygen which may be present in the spent gases. These readings are continuous and can be made at any instant from combustion samples taken from any part of the furnace, pit or crucible atmospheres.

NATIONAL BEARING METALS CORPORATION
6930 Manchester Avenue
St. Louis 10, Mo.

August 25, 1943

Mr. Albert F. Hake
Cities Service Oil Company
1320 Knoklind Avenue
Saint Louis, Missouri

Dear Mr. Hake:

I wish to thank you and the Cities Service Oil Company for the use of the Heat Prover instrument.

The Heat Prover has been a great help in our maintaining the correct furnace atmosphere in all of our brass and bronze melting furnaces, both crucible and open flame types. This instrument gives a very fast and accurate reading on both oxygen and carbon-monoxide, as we have checked it a number of times with our standard Orsat equipment.

The biggest advantage, I feel, of your instrument is that I am able to get a continuous reading during adjustment of the furnace combustion and am also able to check and adjust sixteen furnaces in a few hours time that would be an all days job with Orsat equipment.

Sincerely yours,

H. M. Baxter III
Plant Metallurgist

*Mail this Coupon

***TODAY FOR AN INDUSTRIAL HEAT PROVER TEST OF YOUR EQUIPMENT*—AT NO COST OR OBLIGATION TO YOU.**

CITIES SERVICE OIL CO.
Room 165
Sixty Wall Tower
New York 5, New York

Gentlemen: Please contact me regarding your Industrial Heat Prover Test.

Name_____

Title_____

Company_____

City_____

(Available only in Cities Service Marketing Territory East of the Rocky Mountains.)

CITIES SERVICE OILS — ONCE-ALWAYS

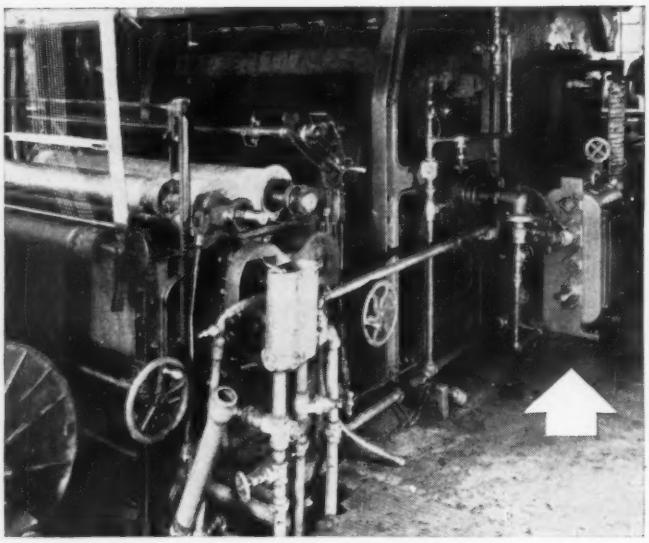
CITIES SERVICE OIL COMPANY

ARKANSAS FUEL OIL COMPANY

☆ PERFECT
Stretch Control

between Size Box and Cylinders—with

REEVES Variable Speed Control

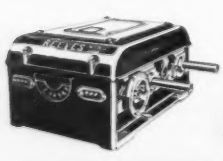


Side shaft of slasher is cut and connected to REEVES *Transmission through which speed of squeeze rolls in size box can be finely adjusted for desired yarn stretch.*

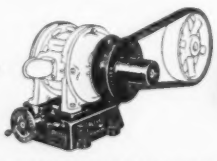
Less breakage at the loom and more uniform cloth when you control stretch between size box and cylinders on your slashers. You secure this control *perfectly* by driving the size box rolls through a REEVES Variable Speed Transmission. The REEVES provides the fine speed adjustment and accuracy necessary for complete tension control at this vital point where stretch is greatest because yarn is wet. It's easy to install a REEVES unit on any textile machine in service. Standardly supplied on most leading makes of new machines to provide complete speed flexibility. Write for complete information and copy of new 128-page catalog W-435.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

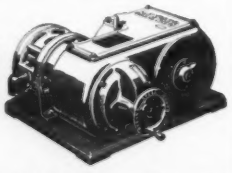
Recognized Leader in the Specialized Field of Speed Control Engineering



VARIABLE SPEED TRANSMISSION for providing infinite, accurate speed flexibility over wide range, 2:1 to 16:1 incl.



VARI-SPEED MOTOR PULLEY converts any standard constant speed motor to a variable speed drive.



MOTODRIVE combines motor, speed varying mechanism and reduction gears in single unit. Speed ratios 2:1 to 6:1.

REEVES Speed Control

Jan. 14. Mr. Wood became associated with the company in 1933.

J. Arthur Warner of the Boston investment house of J. Arthur Warner & Co., has been elected a director and executive committee member of the Nashua Mfg. Co., Nashua, N. H.

J. A. Becher, formerly with the Riverside & Dan River Cotton Mills, Danville, Va., has become associated with Reeves Bros., New York as director of research. Mr. Becher has been at Riverside & Dan River since 1922, joining that concern as head designer and later becoming production manager, mill superintendent of the fancy goods division, and later assistant general superintendent of all plants. Mr. Becher will aid in the conversion of mills to the fields of synthetics and blended fabrics as soon as present war demands taper off.

J. Edward Riley and **Richard G. Webster** have established a partnership to conduct a wool, wool waste and specialty fiber business under the name of Riley & Webster, with offices at 263 Summer Street, Boston, Mass.

John L. Amberg has been appointed to direct the export department of Schindel-McDaniels Co., New York. This department will handle a wide variety of textiles suitable for the export trade.

Armand Emrich, Jr., has been named Atlanta sales representative of William L. Barrell Co., New York. Mr. Emrich will cover the Southeastern territory. He was previously with Barrell but has been on active military service with the Federalized National Guard for the last three years. He was honorably discharged due to injury.

C. C. Dawson, vice-president and director of the Cramerton Mills, Cramerton, N. C., has just been named by the Junior Chamber of Commerce, Belmont, N. C., as the citizen of the community whose work and influence during the last year has been most outstanding. Special recognition was paid to Mr. Dawson at the group's annual banquet meeting on Jan. 27.

Dr. J. E. Mills, chief chemist of Sonoco Products Co., Hartsville, S. C., has been elected secretary of the Coker College Board of Trustees, Hartsville.

W. Allen Traver, vice-president and general plant manager of Franklin Process Co., Providence, R. I., has been elected president of the Providence Chamber of Commerce.

***DR. W. E. COUGHLIN** who has been appointed textile technologist in charge of Good Housekeeping's Textile Laboratory, in New York. He was formerly with the Celanese Corp. of America where he has been in the technical division since April 1930. He has been loaned by Celanese at various times to the National Association of Dyers and Cleaners as a Research Associate and has been active both in research and educational work in the textile field generally, working with retailers and garment manufacturers.*

Stanley Drake has entered the wool business on his own account under the name of Drake & Co., 253 Summer Street, Boston, Mass. He was formerly connected with the Lawrence T. Ritchie Co., Boston.

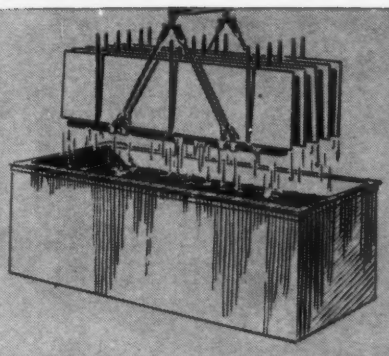
Henry L. Holshouser, superintendent of the Finer Full-Fashioned Hosiery Co., Charlotte, N. C., is now vice-president, having been promoted to this position.

L. R. Buckner, for many years with mills producing Textron products, has been made manager of the office opened by Textron, Inc., at 52 Chauncey St., Boston. He will be regional sales manager for Textron's New England district. Associated with him in the New England area will be **W. J. O'Donnell, C. Dunne** and **E. C. Sharp.**

Harold Leydon, eastern sales manager of North Star Woolen Mills Co., Minneapolis, Minn., who has also been functioning as New York branch manager, has been relieved of the latter duties in order to devote full time to his rapidly expanding work in the eastern area. **Peter McCrae,** who joined the North Star organization a year ago in special research capacities and then as Boston branch manager,

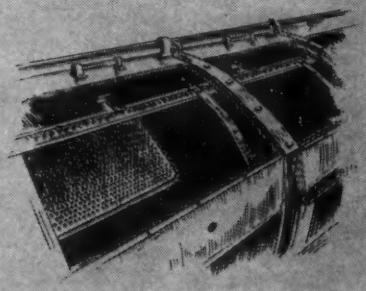
Monel lasts for years holding

ACID BATHS FOR STEEL



...no wonder it lasts so long holding

DYE BATHS FOR HOSIERY



Steel mills dip metal products in an acid bath to clean them.

The job is called *pickling.*

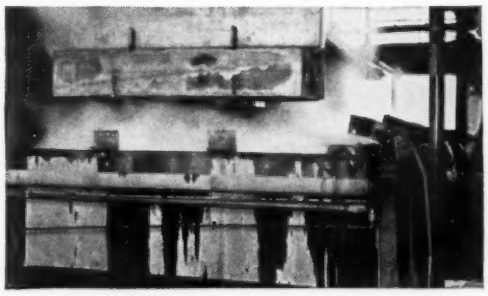
It requires metal equipment with properties similar to those needed by good dyehouse equipment . . . strength, toughness, high resistance to corrosion. But pickling is a much severer test of a metal's mettle.

Monel is chosen for modern pickling equipment because it has the strength and corrosion resistance to last for years. This same combination of properties makes it uniquely fitted for dyehouse machinery.

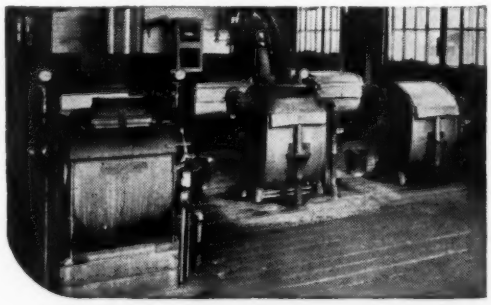
Many Monel dyeing machines installed during World War I are steadily at work today, maintaining peak production schedules. Their trouble-free service is especially important now, when repair parts and labor are so hard to get.

If you are planning for your dyehouse of tomorrow, put down this note: *remember Monel equipment.*

The International Nickel Company, Inc., 67 Wall St., New York 5, N. Y.

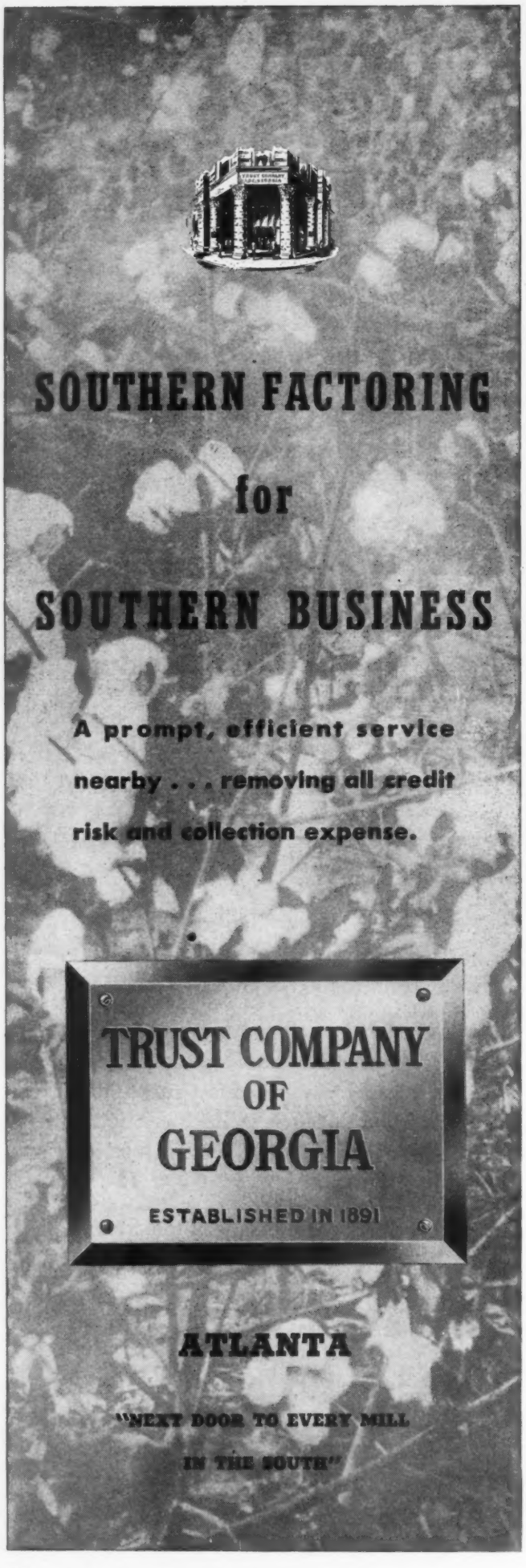


"WASHING" STEEL SHEETS in a large Michigan automotive plant. This Monel equipment has been handling 2-ton loads of steel in tanks of 180° sulfuric acid for over 14 years.



FOR OVER 15 YEARS these Monel Smith-Drum rotary hosiery dyeing machines have been exposed to reducing and acid liquors. "Machines show no corrosion in any form" says the user.

MONEL for long-lived dyehouse equipment


SOUTHERN FACTORING
for
SOUTHERN BUSINESS
A prompt, efficient service nearby . . . removing all credit risk and collection expense.
TRUST COMPANY OF GEORGIA
ESTABLISHED IN 1891
ATLANTA
"NEXT DOOR TO EVERY MILL IN THE SOUTH"

NEWS ABOUT MEN

has been appointed branch manager in New York. **Stuart T. Abbott** has been named Boston branch manager. **E. C. Campbell** takes over as branch manager at Cleveland.

S. Vincent Wilking, formerly personnel director for the Kerr Mills of American Thread Co., Fall River, Mass., has become director of industrial relations for the Hathaway Mfg. Co., New Bedford, Mass.

Miss Evelyn Pearson, associated for the last eight years with Elias Sayour, Inc., has been appointed merchandise manager of a newly created housecoat and negligee department for Textron, Inc., New York.

W. P. Irwin has become superintendent of the Mills Mill, Greenville, S. C., succeeding **Frank Cunningham,** who has been appointed superintendent of the Mills Mills, Woodruff, S. C., after serving as superintendent of the Greenville unit for two and one-half years. Mr. Irwin was formerly superintendent of the Warrior Duck Mill, Spartanburg, S. C. Mr. Cunningham succeeds **J. E. Reeves** at Woodruff, who was recently made vice president of the operating company, Reeves Bros.

J. Milton Brindley, formerly superintendent has become general manager of the Cluett, Peabody & Co., Inc., plant at North Grosvenordale, Conn., succeeding George V. Meehan who has resigned. Mr. Meehan had held the office since the present corporation acquired property of the Grosvenordale Co. April 1, 1942. He plans to devote his time to business interests at Fall River, Mass., and Providence, R. I. He is to retain his home at Thompson, Conn. He was identified with the Grosvenordale Co. for about 21 years.

William Stelzner has succeeded the late Charles Ray as manager of the Saxony Corp., Norwich, Conn., reworked wool. Mr. Stelzner had been superintendent and assistant manager since 1916. **Bart Cody** has become superintendent, after 12 years with the company.

Lloyd Seaver has been appointed general manager of the Putnam, Conn., plant of Belding Heminway Corticelli, Inc., to succeed the late **David Moxon. Hans H. Dahlgren** has been made plant superintendent, a newly-created position. **Rudolph F. Nelson,** identified with the Putnam plant several years, is made assistant superintendent. **Clyde L. Eckler** has been appointed office manager.

H. S. Leybourne has been named assistant general manager of Dominion Woolens & Worsteds, Ltd., Peterborough, Ont., a position just created. He started with the company as an office helper at the Forbes serge plant in Hespler, Ont. Lately he has been manager of the Montreal plant.

A. J. Maguire, credit manager of American Viscose Corp., New York, has been re-elected president of the Rayon Yarns Credit Association, **Charles Everett** of E. I. du Pont de Nemours & Co., has been elected vice-president, and **John J. Burke,** of Tubize Rayon Corp. was re-elected to serve as treasurer.

J. D. Watkins has succeeded O. F. Benton, who died recently, as general superintendent of Cowikee Mills, Inc., Eufaula, Ala.

John S. Lewis, manager of the silk mill at the Slingsby Mfg. Co., Brantford, Ont., now on loan to the Dominion Government, has been appointed a director of the Melbourne Merchandising Ltd., a Crown company to purchase and stock-pile raw silk for war uses.

W. G. Alligood, North Carolina's softball commissioner, and for a number of years textile designer with the Rosemary Mfg. Co., Roanoke Rapids, N. C., has joined the staff of the American Yarn & Processing Co., Mount Holly N. C. His work will be the personnel and religious departments.

James A. Sullivan is now manager of the Postex Cotton Mills, Inc., Post, Tex.

J. A. Fife, Jr., has become superintendent of the Scottdale Mills, Scottdale, Ga., having resigned as night superintendent of the Ware Shoals Mfg. Co., Ware Shoals, S. C., to accept this new position.

J. F. Davis, formerly superintendent of spinning of the Lonsdale Mill, Seneca, S. C., has become superintendent of spinning of the Monarch plant of Monarch Mills, Union, S. C.

J. B. Walker has been appointed assistant superintendent of Eastman Cotton Mills, Eastman, Ga., succeeding **Luke Long.** He was promoted to this position from that of head of the weaving department.

This stainless steel silk and rayon dye beck is washed and rinsed at regular intervals. Result: No war-time "maintenance blues" in this mill.

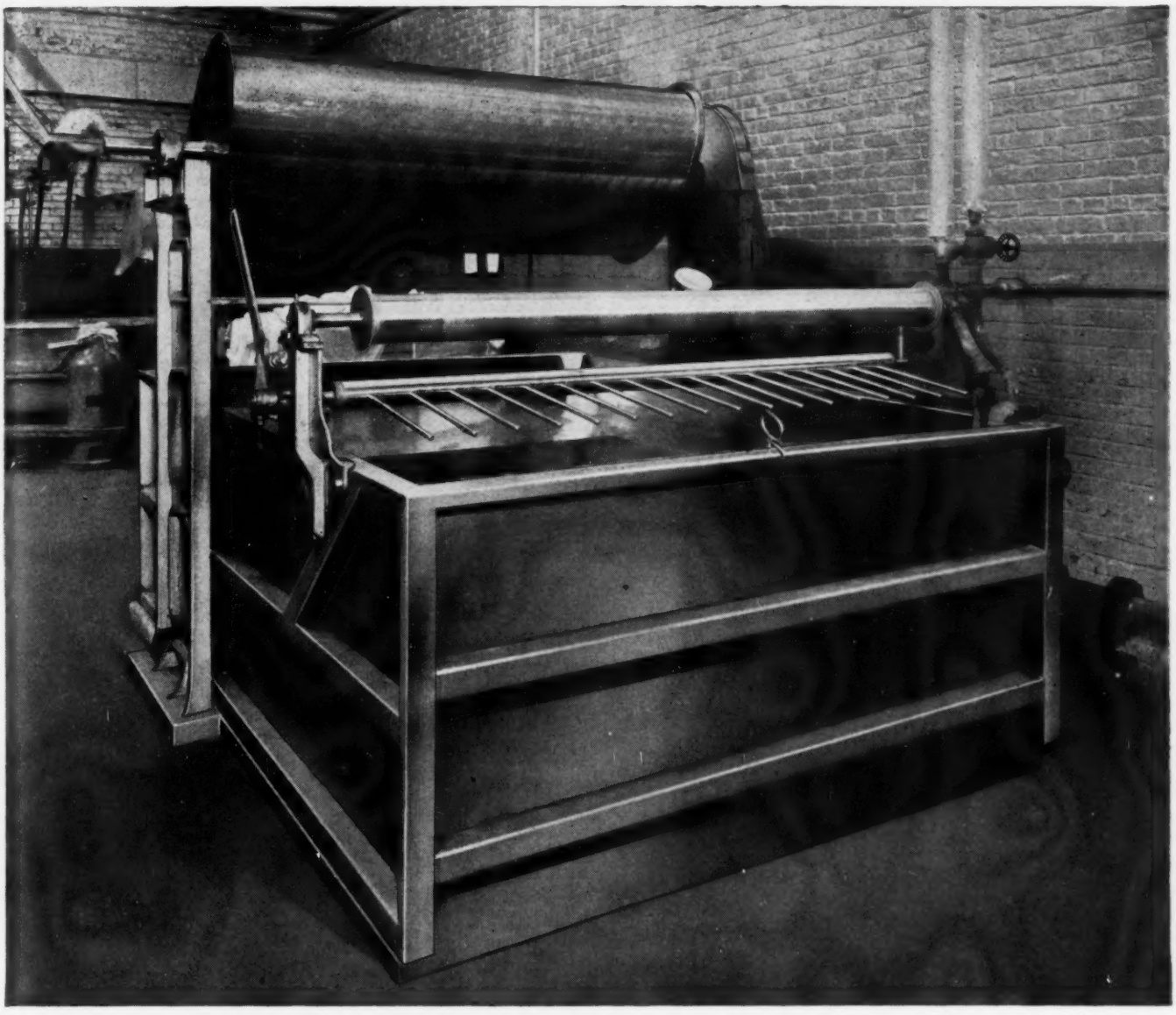


PHOTO COURTESY RIGGS AND LOMBARD

What is a "V-DAY" PLAN?

First, a "V-Day" plan is *all-out* textile production for victory; second, an outline of the new conditions you will be likely to face when peace comes.

Right now, textile men know their biggest job is to keep production machinery in top running order. This means an organized maintenance program and the fixing of responsibility for regular inspections. Stainless steel equipment, for example, should be kept free of lint and other deposits. A thorough rinse is all that is needed.

The second big task is to plan for post-war production. Many textile manufacturers are planning to train new men; many are keeping tab on the kinds of products that show the most profit. And they are planning a buying program *now* to replace worn, obsolete or inefficient equipment after the war.

Much of this post-war equipment can advantageously be made of ARMCO Stainless Steel. Dyeing and fulling machines, bleaching equipment and drying machines are a few examples. Keep this rustless war-proved metal in mind when "V-Day" comes. For information about ARMCO Stainless, just write to The American Rolling Mill Company, 2821 Curtis Street, Middletown, Ohio, U. S. A.

STAINLESS ARMCO STEEL

THE AMERICAN ROLLING MILL COMPANY

WHITMAN YARNS

WORSTED · COTTON · SPUN RAYON

WHITMAN SERVICE
1852-1944

During 92 years The William Whitman Company, Inc., and its predecessors have served the interests of important mills and users of yarns, seeking to establish for its customers a steady flow of dependable, quality yarns.

ARLINGTON MILLS
LAWRENCE, MASS.

Bradford Spun Worsted Yarns, Natural and Slub-dyed Colors and Mixes.

MONOMAC SPINNING CO.
LAWRENCE, MASS.

French-spun Worsted and Merino Yarns. Specialty Yarns—Rabbits Hair, Rayon, Acetate and Other Blend Yarns.

NONQUITT MILLS
NEW BEDFORD, MASS.

Cotton and Spun Rayon Yarns, Merino Blends, Specialty Rayon and Wool Mixtures.

WILLIAM WHITMAN COMPANY, INC.

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BOSTON, 78 Chauncy St. — NEW YORK, 261 Fifth Ave.
PHILADELPHIA, 1600 Arch St. — CHARLOTTE, Commercial Bank Bldg.

NEWS ABOUT MEN

S. H. Holder has relinquished his duties with Consolidated Textile Corp., Lynchburg, Va., and has accepted the position of superintendent of Pacolet Mfg. Co., Gainesville, Ga., plant. **J. W. O'Neal** was formerly superintendent of the plant but has been promoted to general superintendent of all of the plants of the Pacolet company.

Charles E. Willis, formerly superintendent of the carding department of the Gayle plant of Springs Cotton Mills, Chester, S. C., has become head of the carding department of W. A. Handley Mfg. Co., Roanoke, Ala.

Clifford O. Morgan, formerly connected with American Thread Co., Dalton, Ga., has become superintendent of the Madora and Adrian units of American Yarn & Processing Co., Mount Holly, N. C.

J. H. Jackson, formerly with Amazon Cotton Mills, Thomasville, N. C., has become superintendent of carding at Cornelius Cotton Mill, Cornelius, N. C.

A. B. Peterson has been promoted to assistant superintendent of Pacolet Mfg. Co., No. 4, New Holland, Ga., from the position of overseer of spinning. **Richard G. Waldrep** succeeds him.

John D. Green, who has been superintendent of Springs Cotton Mills, Kershaw, S. C., has been promoted to manager. He was formerly assistant manager of the company's plant at Lancaster, S. C.

C. H. Hudgens, who has held the position of shift foreman in the preparation department of the rayon mill of Marshall Field & Co., Spray, N. C., has been promoted to general foreman of the same department. **Jack Washburn** has been appointed shift foreman.

Olin Dunn has become superintendent of Tifton Cotton Mills, Tifton, Ga., succeeding **C. M. Moore,** resigned. Mr. Dunn was for many years with Avondale Mills of Alabama, and more recently with Riverside & Dan River Cotton Mills, Danville, Va.

Harry Taylor Brown, superintendent of carding of Payne unit of Bibb Mfg. Co., Macon, Ga., has completed 30 years of service with the company.

T. C. Flanagan, formerly of Whitehall, Ga., has accepted the position of superintendent of Manetta Mills, Monroe, N. C.

Charles C. Bagwell has become superintendent of Martel Mill Corp., Lexington, S. C.

H. F. Hogue has become superintendent of American Yarn & Processing Co., Whitnel, N. C., plant.

Paul A. Frank is now in charge of the third shift of Swift Spinning Mills, Columbus, Ga.

Gene McGarity has joined the laboratory staff of Cleveland Cloth Mills, Shelby, N. C. He was graduated from the Textile School of the North Carolina State College.

J. Lane Short has become general overseer of the different departments of Kings Mountain Mfg. Co., Kings Mountain, N. C.

Wade Short has become superintendent of Queen Ann Mills, Ellenboro, N. C.

H. T. Leverette has been promoted to general superintendent of spinning at Chiquola Mfg. Co., Honea Path, S. C., succeeding **Homer Thompson,** resigned.

Romey Henson, formerly with Callaway Mills, LaGrange, Ga., has become night superintendent of the spinning department of Montgomery Cotton Mills, Montgomery, Ala.

B. H. Block, manager of the throwing department of Burlington Mills Corp., Greensboro, N. C., is teaching a class at the Woman's College, unit of the University of North Carolina, on fabric testing and analysis two nights each week.

J. E. Duncan, superintendent of carding at Hartsville Cotton Mill, Hartsville, S. C., has resigned to accept a position with West Boylston Mfg. Co., West Boylston, Ala.

T. M. Brigmon, who has been assistant superintendent of Glen Raven Cotton Mills, No. 2 unit, Kinston, N. C., has been promoted to superintendent.

W. A. Ruffin, formerly assistant superintendent of Buck Creek Cotton Mills, Siluria, Ala., has become superintendent of Bama Cotton Mills, Enterprise, Ala.

Mrs. Gertrude F. Clinton has accepted a position in the personnel relations department of Firestone Tire & Rubber Co., Gastonia, N. C. She was formerly North Carolina director for the U. S. Employment Service.

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The improved TYPE K stripper, Automatic Bobbin Box Hoist and Conveyor Elevator—a modern, compact system for increasing the efficiency and lowering the cost of bobbin cleaning and handling.

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NEWS ABOUT MEN

W. M. Cartel has become superintendent of the No. 2 plant of Jackson Mills, Wellford, S. C. He was formerly assistant superintendent of Mathews Cotton Mill, Greenwood, S. C.

C. E. Dorn has become superintendent of the Meritas Mill unit of Bibb Mfg. Co., at Columbus, Ga. **O. B. Alston** has been promoted to assistant superintendent, and **R. M. Stephens,** division superintendent, has been put in charge of the spooling through finishing departments.

Fred K. Keasler has been promoted to assistant superintendent of Enoree, S. C., plant of Riverdale Cotton Mills.

L. O. Walker, president of the Foremen's Club of the York Mfg. Co., Saco, Me., presided recently at a dinner meeting of the club. The speaker was Dr. Donald Laird, and the subject "How to Understand and Work with People." Twenty-nine members were present.

Byran Wood formerly overseer of sewing at Oakleaf plant of Callaway Mills, La Grange, Ga., has accepted a position with the Valway plant.

John S. Taylor, for the last six years auditor and manager of Starmount Country Club at Greensboro, has joined the auditing department of the Burlington Mills Corp., Greensboro, N. C.

(*Continued on page 180*)

Men in Armed Services

Everett R. Cook, formerly head of Cook & Co., cotton shippers of Memphis, Tenn., who has served as Deputy Chief of Staff of the Eighth Air Force in the United Kingdom, with rank of colonel has been awarded the Legion of Merit Medal by Commanding General Dwight D. Eisenhower. When the American and British Forces were combined in North Africa, he served as both Assistant Chief of Staff A-1, and Deputy Chief of Staff of the Northwest African Air Force. During the First World War, Colonel Cook distinguished himself in combat flying, for which he received the Distinguished Service Cross, the Silver Star Medal and the Croix de Guerre with palm.

W. B. Moore, assistant treasurer of the Cramerton Mills, Cramerton, N. C., before entering the armed services, has been promoted to first lieutenant in the U. S. Marine Corps Reserve, and has been taking special training at Fort Benning, Ga. He will return to his station at New River, N. C., in March.

J. D. Phillips, former treasurer of Morgan Cotton Mills, Laurel Hill, N. C., who entered the army in July, 1942, and who has been stationed recently in Atlanta, Ga., as director of procurement, Fourth Corps Area Supply Depot, has been promoted to lieutenant colonel.

D. D. Carroll, lieutenant (j.g.) U. S. N. R., who is president and treasurer of the Bennettsville (S. C.) plant of Marlboro Cotton Mills, recently was assigned to duty at Babson Park, Mass.

EDMUND F. MONROE who has been promoted to the rank of captain. He is stationed at the Philadelphia Quartermaster Depot. In civilian life, Capt. Monroe was associated with the Better Fabrics Testing Bureau, Kendall Mills and the Eureka Print Works. He lived in Leonia, N. J.

Frederick Spoerl, formerly of H. W. Butterworth & Sons Co., Philadelphia, now in the Army with rank of lieutenant colonel, has been named officer in charge of the Florida Field Station of the Signal Corps Ground Signal Agency at Clermont, Fla. He had been a reserve corps officer since 1924, and reported for active duty in January, 1941.

W. Eugene Johnson, Clinton, S. C., purchasing agent for Clinton Cotton Mills and Lydia Cotton Mills, prior to entering the armed services, has

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To the man responsible for your production and to the man whose job it is to keep insurance costs down, slipping and falling accidents in your carding, picking, spinning, and weaving rooms present a serious problem — but one that is, fortunately, easily solved by SPEEDI-DRI — a white, granular substance that provides an immediate, non-skid surface on the oiliest, greasiest floor. Banked around the bases of mules and looms, SPEEDI-DRI soaks up oil and grease like a blotter absorbs ink, drawing *all* the oil (even old stains) right out of wood, steel, or concrete. At the same time, it retards fire because it won't burn even when oil-soaked; brightens up the plant; saves vital manpower needed for more productive jobs than cleaning; speeds production by making workers sure-footed. Write for literature and FREE SAMPLE.

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All Subject to Required Priorities

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Weathering effects of sunlight, rain, heavy dew and thermal shock reproduced in the laboratory at an accelerated rate that reduces years of actual weathering to a few days of testing in the —

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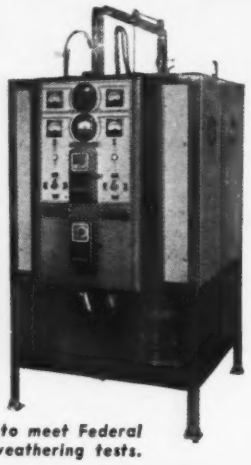
The Twin-Arc Weather-Ometer has full automatic control of light and water periods. The Atlas Cycle Timer unit can be set to reproduce any combination of weathering conditions. A direct reading thermal regulator, automatic shut-off switch and a running time meter is included on the control panel. After setting exposure cycle on the control panel the Weather-Ometer is safe to be left in continuous operation over night without attention except to replace carbons once in 24 hours.



The Atlas Weather-Ometer is required to meet Federal Specifications demanding accelerated weathering tests.

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KEEP ON BUYING WAR BONDS

NEWS ABOUT MEN

been promoted to captain. He is stationed at Fort Jackson, S. C.

Campbell C. Brigman, Jr., lieutenant in Army has been missing in action since Dec. 30. Lieut. Brigman, who was connected with the Springs Cotton Mills, Lancaster, S. C., before entering the service, had been in England and presumably was taking part in the bombing of Germany. His father is Springs personnel director.

Dr. Huston St. Clair, Tazewell industrialist and president of the Virginia State Chamber of Commerce, has been commissioned a captain in the United States Army and has reported for active duty in the Medical Corps. He is associated with the Cedar Bluff Blanket Mills.

Brig. Gen. Allen R. Kimball, formerly in command at Jeffersonville QM Depot, has been transferred to overseas duty. He has been succeeded at the depot by Brig. Gen. Guy I. Rowe, whose previous assignment was in command of the QM Replacement Training Center at Camp Lee, Va. He received his first commission in 1910, and served with distinction in France in World War I.

A destroyer escort, to be launched soon, will be named the USS Hunter Marshall, in honor of the late Ensign Hunter Marshall, 3d, USNR, son of the secretary-treasurer of the North Carolina Cotton Manufacturers Association, of Charlotte, N. C.

Edward J. Bullard, treasurer of E. H. Jacobs Mfg. Co., Danielson, Conn., has been promoted to major in Army Air Force. He is at Mitchel Field, L. I.

Irwin Charles Mendoza, assistant purchasing agent of United Merchants & Mfrs., New York, before entering the Army, has been promoted to rank of captain. He is adjutant to the commanding officer at Lake Charles Army Air Field, La.

Gaston Jennings, on leave from J. P. Stevens & Co., New York, and captain in field artillery, has been taking special training at Fort Sill, Okla.

Albert J. Bruno, technical salesman, who has been with General Dyestuff Corp., New York, since 1928, with the exception of one year's mill experience, was inducted into the Army at Camp Dix, N. J., Feb. 14.

Obituary

Clarence M. Guggenheimer, 66, vice president of the Cone Export & Commission Co., Greensboro, N. C., died Feb. 15 at Miami Beach, Fla. A native of Lynchburg, Va., he first became associated with the Cone company as a salesman in the Boston office in 1901. He later moved to New York and was elected treasurer of the firm, becoming vice president in 1938.

Charles Lewis Harding, 65, president of Harding, Tilton & Co., Boston, Mass., yarn dealers, and a director in a number of textile mills, died at Palm Beach, Fla., on Feb. 18. He entered the textile industry in the employ of Arlington Mills, Lawrence, Mass., in 1903. His present firm was established in 1909.

William X. Coleman, 77, died recently at Trooper, a suburb of Norristown, Pa. For many years, he operated the Norristown Woolen Mills with his brother Joseph A. Coleman.

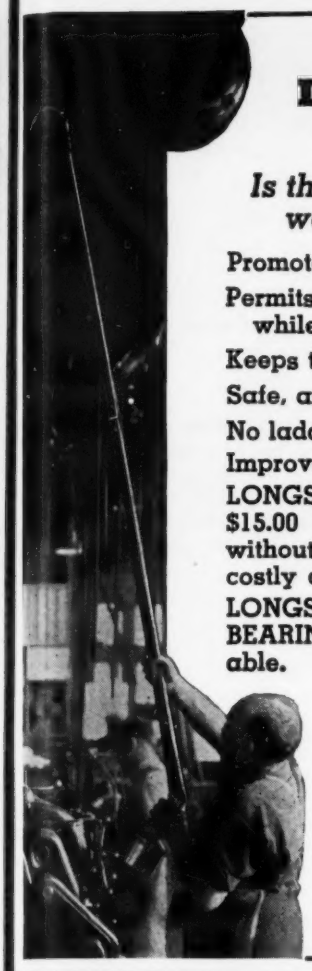
Jacob Getner, 58, an official of Getner Knitting Mills, Birmingham, Ala., died recently.

Harry Markham Marsh, 63, president of J. W. Westaway Co., Ltd., Hamilton, Ont., died recently. After several years experience with the Hamilton Cotton Co., he joined the Westaway firm in 1918, rising to the presidency in 1935.

Charles Copeland, 76, formerly secretary and director of E. I. du Pont de Nemours & Co., Wilmington, Del., died Feb. 3. He was with the company from 1903 to 1942.

Frederick E. Hunter, 84, one time carpet manufacturer and an official of the old Hartford Carpet Co., Hartford, Conn., died Feb. 7 at his home in Thompsonville. Mr. Hunter resigned from the carpet company in 1905 after 25 years of service, most of the time as assistant superintendent and superintendent.

Grady Jay Shepherd, 52, Greensboro, N. C., assistant secretary of the Revolution Cotton Mills, with which he



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Promotes better belt care.

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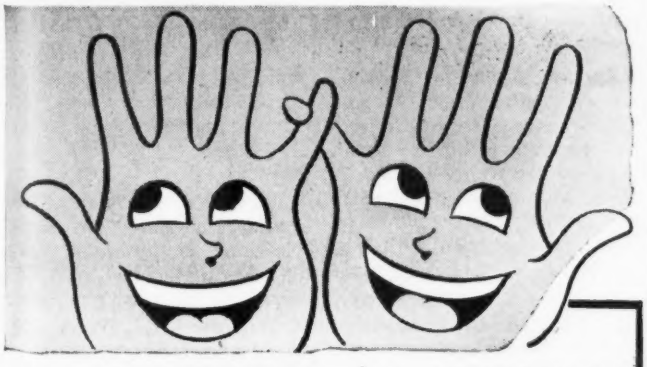

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HAN-KLEEN (1). A heavy duty powder for removing stubborn grease, grime, graphite, et cetera.

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HAN-SAN. A liquid soap. Rich-lathering. Economical . . . can be diluted with four parts water for some needs.

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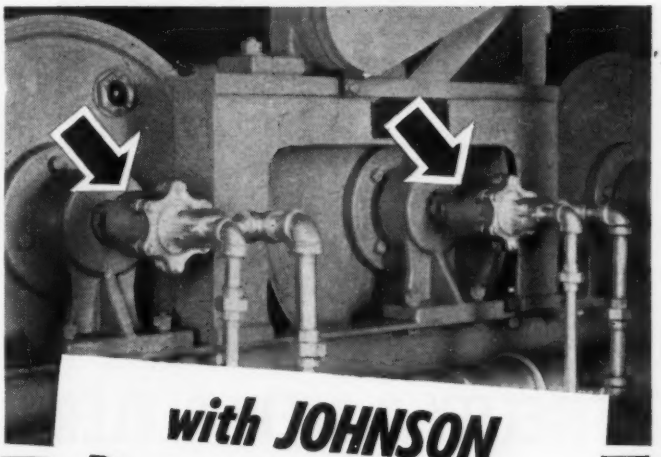

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WHEN you're looking for ways to ease today's "Help Wanted" problem, it will pay to check into your stuffing boxes or steam fits. They demand a lot of care and attention—for inspecting, servicing and, too frequently, for replacing parts worn rapidly by misalignment.

With Johnson Rotary Pressure Joints you save these precious hours of labor for more productive work, because the Johnson Joint is completely packless, self-oiling, self-adjusting and even self-aligning. You save also the production time that is wasted when machines are shut down for stuffing box repair. And with the Johnson Joint you have a simpler, easier way to provide modern, more efficient methods of syphon roll drainage.

For today's big task these production boosting benefits of the Johnson Joint are of first importance. Don't overlook, however, the savings in dollars and cents—in reduced maintenance and longer life—which can quickly pay the cost of change-over. Make that your final reason for joining the hundreds of Johnson Joint users.

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● Nipple (1) fastened to roll. Sliding collar (2) keyed to nipple. Carbon graphite seal ring (3) and bearing ring (4) which eliminate oiling and packing. Spring (5) is for initial seating only; joint is actually pressure sealed when in operation.

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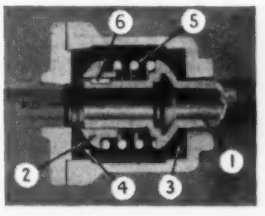

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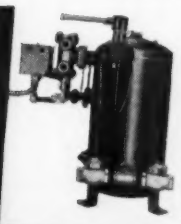

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had been connected for more than 20 years, died Feb. 19.

William C. Myers, 55, secretary and general manager of the North State Mfg. Co., Thomasville, N. C., died recently in Charlotte, N. C.

Thomas S. Quigley, 43, eastern division manager for Johnson & Johnson, New Brunswick, N. J., died at Philadelphia, Feb. 10.

J. R. Culbreth, 57, prominent cotton factor of Moultrie, Ga., died Feb. 7.

James H. MacMahon, 83, for nearly 40 years with Mathieson Alkali Works and a pioneer in the introduction of American-made bleaching powder and liquid chlorine, died at Buffalo, N. Y., recently. He retired in 1935.

Owen Franklin Benton, 60, general superintendent of Cowikee Mills, Eufaula, Ala., died recently. For the last 15 years he had served as superintendent of the two Cowikee plants at Eufaula and the two other mills at Union Springs and Ozark.

George Randal Harris, 77, for many years connected with the Cone Export & Commission Co., Greensboro, N. C., until his retirement a few years ago, died recently.

Eugene G. Dursin, 61, general agent of Argonne Worsted Co., Woonsocket, R. I., died last month. He became agent of Lafayette Worsted Co. in 1900, and when organization was divided into two firms in 1936, he continued with one of them as agent of Argonne.

Richard Thompson Cann, 63, manager of three explosives and one rayon plant during his 40-year career with E. I. du Pont de Nemours & Co., died Feb. 10. He had been with the Buffalo, N. Y., rayon plant since around 1929.

Leroy Abner Werts, secretary and assistant treasurer of Mills Mill, Greenville, S. C., died Feb. 10. For a number of years he was associated with the Belton Cotton Mills, Belton, S. C., before going to Greenville 24 years ago.

James Hayes, at one time manager of the Boston office of National Aniline & Chemical Co. and for 28 years with that concern until his retirement several years ago, died in Seattle, Wash., recently.

John Raymond Grogan, 49, Spray, N. C., overseer at Lilly Mill, of the Marshall Field & Co. group of textile mills at Spray-Leaksville, died Jan. 31.

Lucien W. Searle, 94, paymaster for 45 years for the S. H. Greene & Sons, Clyde Print Works in Rhode Island prior to the closing of the plant in 1924, died on Feb. 15 at West Warwick, R. I.

I. B. Garner, overseer of the cloth room at Brandon Corp., Woodruff, S. C., died Feb. 19.

Luke Sanford Winchester, 44, for a number of years with the Gayle plant of Springs Cotton Mills, Chester, S. C., and prior to that time, with the Chester plant of Aragon-Baldwin Cotton Mills, died at his home in Chester, Feb. 19.

D. S. Boyce Bridges, superintendent of weaving at the Cliffside Mills, Cliffside, N. C., died Feb. 7.

Michael J. White, 68, once national president of the Mule Spinners' Union for six years and former mayor of Dover, N. H., died recently.

Lester Eugene Aiken, 48, overseer of the card room of Beacon Mfg. Co., Swannanoa, N. C., died in Asheville, N. C., Jan. 25.

Fred Hilton, 65, master mechanic at Arkwright Finishing Co., Providence and Fiskville, R. I., died on Jan. 20 at Saylesville, R. I. He was formerly connected with the Lincoln Bleachery and American Print Works, Fall River, Mass.

John Walter Krantz, 66, assistant superintendent of the bleaching and finishing plants of Marshall Field & Co., Spray, N. C., died recently.

Matthew H. Wood, 61, secretary and treasurer of Consolidated Textile Corp., New York, N. Y., with plants at Lynchburg, Va., and Shelby, N. C., died recently.

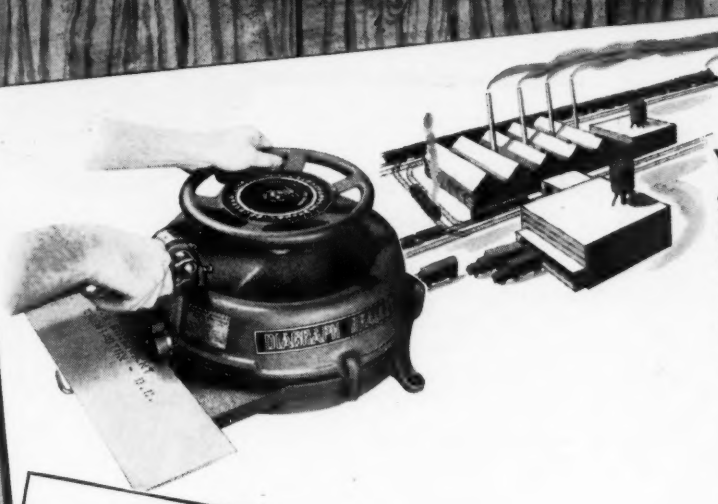
Thomas F. Turner, 68, engineer for Newberry Cotton Mills, Newberry, S. C., for 39 years, died Jan. 16.

John F. Long, general manager of the Laurel Cotton Mills, Laurel, Miss., died recently.

Jesse L. Starnes, 49, superintendent of the mechanical department of the Slater Mfg. Co., Slater, S. C., for 18 years, died Feb. 8.

Almon E. Conrath, 54, superintendent of the Hamilton Twine Mill of the International Harvester Co. of Canada Ltd., Hamilton, Ont., died suddenly at his home in that city recently.

STENCILED SHIPMENTS ROLL FASTER



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STENCIL ADDRESS YOUR SHIPMENTS with easily read, permanent stenciled markings—***they'll roll faster, and costly delays in transit will be eliminated.***

DIAGRAPH-BRADLEY manufactures a stencil cutter for every shipper's need. Machines are available for cutting letters ½", ¾", ⅞", 1¼", 1½" & 1¾".

Most government export shipments require stenciling in letter size 1½" or larger.

Diagraph-Bradley is the only manufacturer making a stencil machine for cutting letters larger than 1".

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"VIRGINIA" (SODIUM) HYDRO

A dependable Hydrosulfite for Vat Dyeing and Stripping.

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3. Easily and Quickly soluble

Packed in 250 lb. *airtight* containers.

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The "Old Reliable" of the finishing plant. Low concentrations . . .

— remove active chlorine
— neutralize residual alkalinity
— eliminate excessive washing

Constant make-up by continuous flow to the pit. Shipped in steel cylinders containing 150 lb. net weight.

VIRGINIA SMELTING CO.
WEST NORFOLK, VIRGINIA

TEAMWORK WINS

Close-knit teamwork scores goals—wins games

Team up with the Corn Products technical staff... always at the service of the textile industry... ready to assist manufacturers with their textile problems.

CORN PRODUCTS SALES COMPANY
17 Battery Place New York 4, N. Y.

Greenville, S. C. Greensboro, N. C. Atlanta, Ga.
Spartanburg, S. C. Birmingham, Ala. Boston, Mass.

NEWS ABOUT Mills

Cotton Mill News

Aero Thread Specialties, Inc., 2802 Barlum Tower Bldg., Detroit, Mich., have been organized to operate a mill in this vicinity for manufacture of special threads and twines used in aircraft production. Richard C. Whichello is principal incorporator.

Amoskeag Co., a holding corporation, Manchester, N. H., has reported a net income of $723,301 after Federal and State taxes, but exclusive of gains or losses on securities sales, for the year ended Dec. 31, 1943, compared with $736,043, the previous year.

American Thread Co., Holyoke, Mass., has work under way on two small one-story additions, for which general contract recently was let to Casper Ranger Construction Co., Holyoke. One structure will be used for mill service and the other for storage.

American Thread Mill, Tallapoosa, Ga., newly acquired unit, has begun operations with between 300 and 400 operatives. J. F. Plexico is plant superintendent.

Anchor Rug Mills, Rock Hill, S. C., operated by a recently formed partnership of J. C. Cloniger, Flay Cloniger, of York, S. C., and J. P. Erkes, Rock Hill, has installed machinery for the manufacture of a variety of rugs. The new company has taken over the small rug plant operated by Mr. Erkes since 1941.

Anderson Weavers, Anderson, S. C., recently destroyed by fire, has been rebuilt, and is about one-third larger than the former plant. It began operations in March.

Buffalo Land Co., Waco, N. C., has been granted a certificate of incorporation to manufacture cotton, wool, jute, hemp, silk, rayon and other materials, with an authorized capital of $100,000, with $12,500 subscribed by Jack S. Turk, Diana Turk, both of New York, and Irving Turk, of Shelby, N. C.

Canadian Cottons, Ltd., Cornwall, Ont., are reported planning an expenditure of about $1,000,000 for extensions in mill, including one-story building for which contract recently was awarded (previously reported), including installation of equipment for large increased output.

Carolina Textiles, Inc., Spartanburg, S. C., is a newly organized mill with John W. Erwin, president and treasurer, and James O. Erwin, vice president and secretary. The new mill will manufacture and finish cotton products.

Goodyear Fabric Corp., New Bedford, Mass., an interest of Goodyear Tire & Rubber Co., Akron, Ohio, has awarded contract to Gilbane Building Co., Providence, R. I., for one-story addition to Nyanza mill property, Woonsocket, R. I., recently secured under lease (as reported previously) for new branch mill, including remodeling and improving present structures. Cost estimated close to $50,000.

Hollywood Textile Co., New Braunfels, Tex., was organized recently to operate the local Texas Gauze Mills.

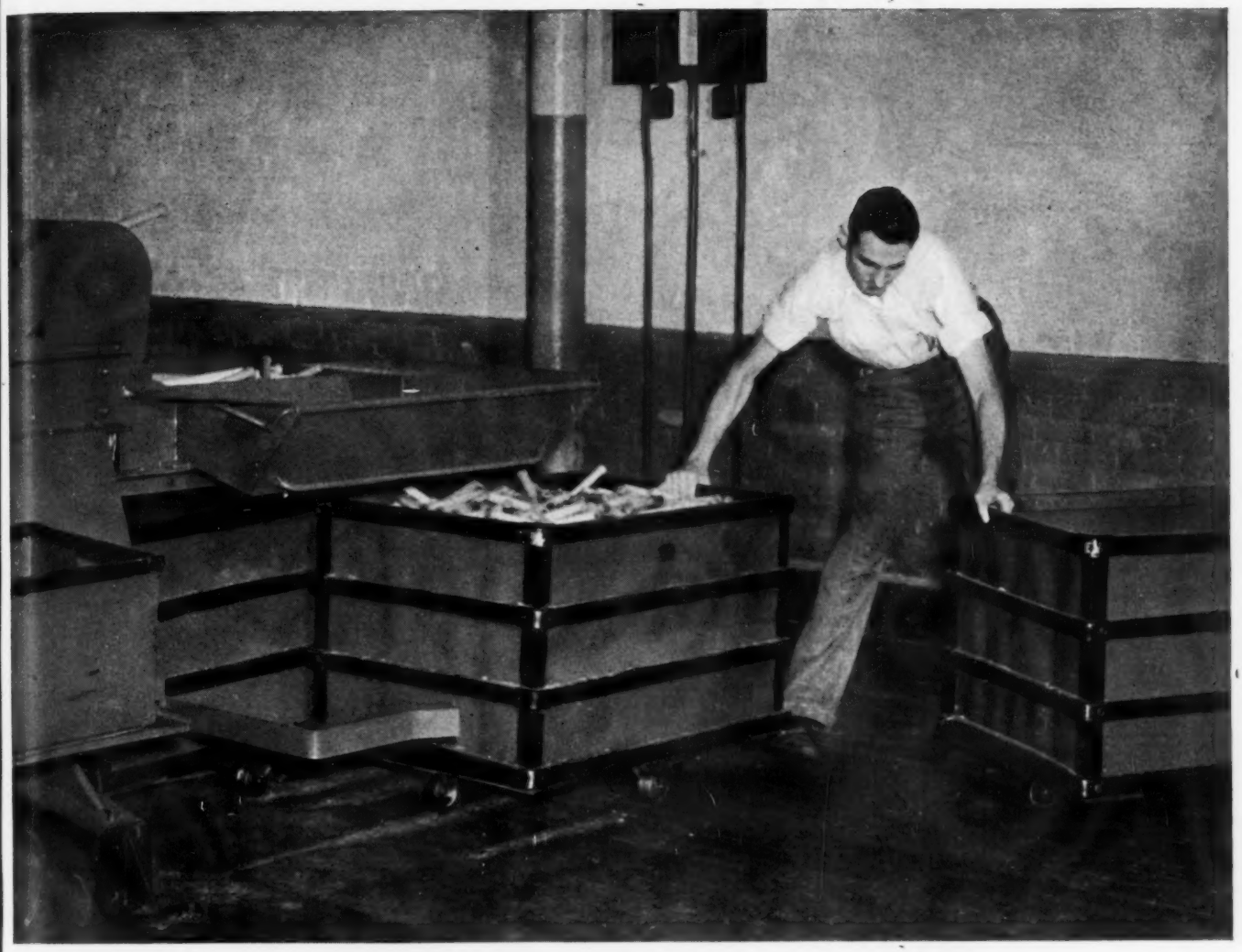
Marvin C. Moore Co., Cleveland, Tenn., lately organized, is equipping a local mill on 31st St., secured under lease, for manufacture of chenille products. Marvin C. Moore is president.

Pacific Coast Textile Co. is the firm name under which Morris A. Halprin has published an intention to conduct business at 439 East Third St., Los Angeles, Calif.

Pacific Mills, Dover, N. H.—Local mill No. 1 of this company has been leased by Sylvania Electric Products, Inc., Ipswich, Mass., and will be converted for another line of manufacture.

Wool Mill News

Ace Woolen Mill, Norwich, Conn., is planning re-establishment of mill in Trading Cove section, where building under lease was recently destroyed by fire. Total loss reported in excess of $85,000. It is under-



Time-Savers for Bobbin-Handling

EACH Barber-Colman Automatic Spooler has a sorting table to which empty bobbins, tailings, and strips from the pockets are delivered automatically by a conveyor. This table is large enough so that the spooler girl can easily and quickly pick out the tailings and strips. It is at convenient working height so no stooping is necessary. Having picked out all bobbins that can be re-run, she opens a flap on the front of the table and the empties slide into a large bobbin truck set under the table. When this truck is full, it can be quickly pulled out and an empty one put in its place. The truck full of empty bobbins is sent to the spinning room. These may seem like small details to be talking about, but they are typical of many features of Barber-Colman Automatic Spoolers—features which add to convenience, saving of effort, saving of time, and increased production—features which make Barber-Colman equipment valuable for producing more and better war goods, faster.

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • TWISTER CREELS • MOISTURE CONTENT CONTROLS

BARBER-COLMAN COMPANY

ROCKFORD, ILLINOIS, U. S. A.

FRAMINGHAM, MASS., U. S. A. GREENVILLE, S. C., U. S. A. MANCHESTER, ENGLAND

Astonishing

How DEVOPAKE hides and covers *any surface in just one coat!*

Who's astonished? Why — maintenance men, factory managers, painting contractors — when they see how much time and money, how many man hours super-hiding DEVOPAKE saves them. Yes . . . it covers most *any* interior wall surface *in just one coat!* and it *lasts* because its *oil-base* protects — makes it stand repeated wash downs.

For complete guaranteed satisfaction — for money saved — specify DEVOPAKE. Be patient with your Devoe Agent if he is temporarily out of popular Devopake. War needs come first.

DEVOE PAINT

The 190th year of the Oldest Paint Maker in America

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TEXTILE INDUSTRY RESEARCH

INCORPORATED

11 WEST 42ND STREET NEW YORK. N. Y.

CONSULTANTS ON TEXTILE MANUFACTURING AND DEVELOPING

SPECIALIZING IN

OPERATING METHODS. WORKING CONDITIONS. MAINTENANCE. WASTE CONTROL. NEW FIBRES AND PROCESSES

Simplified **DESIGN**
Flexible **POWER**
Better **EVAPORATION**
More sensitive **CONTROL**

SOUTHWORTH HUMIDIFIER

Experienced textile men who know the merits of previous models of Southworth Humidifiers have found improvements in Model D that make it even more reliable and efficient.
Extreme sensitivity of control, and an "airplane propeller" type fan for greater evaporation, are two outstanding features.

NOTE
This advertisement is to remind you to include Southworth Humidifiers in your after-the-war plans. Frankly, we are 100% on war work and cannot make humidifiers at the present time.

THE SOUTHWORTH MACHINE CO.
PORTLAND MAINE

stood that leased structure, owned by Max H. Furman, will be rebuilt at once.

Atlanta Woolen Mills, Atlanta, Ga., William Nixon owner, plans to re-equip the mills and augment the personnel to meet post-war needs.

Atkinson Spinning Co., Lowell, Mass., has been organized by Fred Atkinson of Barrington, R. I., who has resigned as superintendent of Bradford spinning at Stephen Spinning Co., Manchester, N. H.

Baxter Woolen Mill, Somersworth, N. H., formerly the Somersworth Woolen Co., suffered damage estimated at $15,000, recently, by a fire which originated in the card room. One card was destroyed and two others badly damaged.

Bigelow Sanford Carpet Co., Thompsonville, Conn., reports a net 1943 income from operations, after charges but before income taxes, of $437,572 to which was added $650,000 from tax refund. Earnings compare with total of $1,261,553 for 1942.

T. H. Clark Carpet Mfg. Co., Norwalk, Conn., had its plant destroyed by fire Feb. 11. The three-story frame building was 75 years old. Firemen were able to save some materials but all carpet looms were burned with the building.

Limerick Yarn Mills, Limerick, Me., has taken over a mill building of Amoskeag Industries, Inc., Manchester, N. H., recently secured under lease, and is removing reserve equipment from Limerick to new location. Property totals approximately 185,000 sq. ft. floor space, and will be equipped with about 5,000 spindles. It will be used for time being for production of cushion-sole sock yarns for armed forces. Glenn Patrick is superintendent.

R. & V. Miller, Inc., 406 Greenwich St., New York, N. Y., woolen clippings, have acquired a two-story industrial building at 574 Ferry St., Newark, N. J., approximating 125,000 sq. ft. of floor space, and will equip for new mill.

Norwood Woolen Mills, Bristol, Va., began operations in the summer of 1943 for the manufacture of wool and rayon yarns. The spinning portion of the Bristol Knitting Mills has been leased by this new concern and they are operating 2,000 mule spindles with an expected output of approximately 20,000 lb. per week. C. V. Henkel, Jr., owner and general manager of the Rocky Creek Mills at Turnersburg, N. C., is owner.

Rohmer Medford Wool Scouring Co., Medford Mass., has awarded contract to J. F. Fitzgerald Construction Co., Boston, Mass., for installation of conveyor system including housing to transport bales of wool from storehouses to plant. The system will be of timber and metal construction and will cost $8,000.

Strathroy Woolen Mills, Ltd., Strathroy, Ont., was recently incorporated with capital of $50,000. The firm manufactures blankets, rugs, clothing, etc.

Uxbridge Woolen Mills, Ltd., Uxbridge, Ont., are planning early rebuilding of portion of mill, recently damaged by fire with loss reported in excess of $100,000, including machinery.

Wanskuck Co., Providence, R. I., is continuing an improvement program on a number of mill buildings, as well as office structure, and has awarded another contract to Rowley Construction Co., Providence, following recent award (previously reported), for improvements in building at 725 Branch Ave.

Wyandotte Worsted Co., Waterville, Me., suffered an estimated loss of $50,000 in a recent fire. The company also operates the Wyandotte Mill in Rochester, N. H., of which Ezra McEwen, brother of Arthur McEwen, Waterville agent, is agent.

Rayon and Silk Mill News

Aldora Mills, Barnesville, Ga. —With W. E. Vecsey as manager, a new unit of the Aldora Mills, for rayon twisting and rayon and cotton tire cord weaving, has started operations at Barnesville, as previously reported. The plant addition increases production by 40%. Another unit, designed to step up production by 60% more, is now under construction. It is scheduled to be completed and ready for operation about May 1. There are 14,000 twisting spindles in the original, 4,000 twisting spindles in the new unit and about 5,000 more to be installed in the additional unit. D. D. Quillian is superintendent of Aldora which has been operated by the General Tire & Rubber Co. since 1931.

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CUT GEARS
CUT RACKS
CUT SPROCKETS

We can help you meet your schedules. No order too large—none too small. Our equipment, personnel and "know-how" assure you of fast, reliable, precision production in Gears and Racks of any material.

We also cut Sprockets for Roller and Silent Chain Drives and do "job" Precision Surface Grinding. Let us work with you. Send specifications and blue prints for estimates.

The Plant that Quality and Service Built

CHICAGO'S FASTEST GROWING GEAR PLANT

INDUSTRIAL GEAR MFG. CO.
4547 VAN BUREN STREET CHICAGO 24, ILLINOIS

Points to remember
Buy War Bonds and

CONSERVE YOUR BEAMS!
Treat Shafts Gently when Beam is Full

NEW BEDFORD, MASS.
ALLEN COMPANY

ALLEN COMPANY, 136 River Road
New Bedford, Mass.—So. Rep.
Mr. L. E. Wooten, Fort Mill, So. Car.

2

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In the South *Of the South*
Serving the South

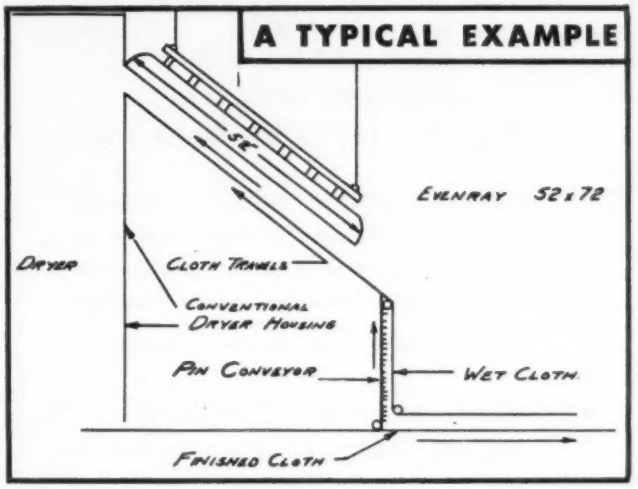
CONSTRUCTION ★ MODERNIZATION

DC DANIEL CONSTRUCTION CO., INC.
Greenville, S. C. Birmingham, Ala.

★ ★

INDUSTRY
Converts to Infrared
FOR BAKING—DRYING—
DEHYDRATING AND PREHEATING

A TYPICAL EXAMPLE



The Operation

To speed the dehydration of woolen cloth, a prominent textile manufacturer sought means to preheat the wet cloth as it entered the conventional dryer, thus reducing dehydration time with the same dryer facilities.

The Solution

Pre-testing by Fostoria Industrial Service engineers proved Near Infrared ideally adaptable to the requirement. As illustrated in the sketch above, a Fostoria Evenray Infrared Unit, size 52" x 72" was installed at the entrance to the dryer, 8" distance from the cloth. By this means, the temperature of the wet cloth was raised from below room temperature to approximately 170 to 190 degrees as it entered the dryer. Production increased from 4 to 6 cuts of cloth per hour and drying is much more uniform.

Advantages Tested for Your Plant

Fostoria Industrial Service Centers, located in major cities, have complete laboratory facilities to test and pre-determine the specific advantages in your baking, drying, dehydrating or preheating operations. This service is offered without obligation. Write, now, for full information.

FOSTORIA INDUSTRIAL SERVICE
Factory and General Offices • Fostoria, Ohio
IN CANADA—Write Amalgamated Electric Corp., Ltd., Toronto

REQUEST FREE BOOKLET *today!*

INFRARED EQUIPMENT
fostoria
FOR BAKING • DRYING • PREHEATING • DEHYDRATING

Trade Mark Reg. U. S. Pat. Off.

Explains the Near Infrared Process and its proven advantages in hundreds of industrial uses. Ask for NP-3-TW

NOW!

RED-RAY
RADIANT BURNER

FOR
TENTERS
PALMERS
RESIN CURING OVENS
LOOP AND NET DRYERS
SLASHERS — SINGEING MACHINES

Speeds increased two to five times. Costs per yard lowered. Increased yardage, handled on existing machines obtained without major changes. Burners quickly installed on present machines.

Write for bulletin and complete information.

RED-RAY MANUFACTURING CO.
455 WEST 45th STREET, NEW YORK CITY

Southern Representative:
CAROLINA SPECIALTY COMPANY
1610 Hartford Rd., Charlotte, N. C.

LAMINATED *Shuttles*

Watson-Williams' precision made, laminated shuttles are equalling the high standard of performance of regular dogwood shuttles. In actual use these laminated shuttles have passed every test without a single failure or breakage. Make your next order Watson-Williams Laminated.

WATSON-WILLIAMS MFG. CO.
MILLBURY, MASS.

SOUTHERN OFFICE: W. F. Daboll, 810 Woodside Bldg., Greenville, S. C.
NORTHERN REP.: G. C. Burbank, 32 Beaconsfield Rd., Worcester, Mass.

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J. E. SIRRINE & CO.
GREENVILLE • SOUTH CAROLINA

Engineers
for more than 40 years

TEXTILE MILLS • CHEMICAL PROCESS PLANTS
PULP & PAPER MILLS • WASTE DISPOSAL
STEAM POWER PLANTS • STEAM UTILIZATION
WATER • APPRAISALS • PLANS • REPORTS

American Viscose Corp., Wilmington, Del., has secured fund of $5,000,000 from Defense Plant Corp., Washington, D. C., for machinery and equipment installation in new additions now under way at branch mill at Front Royal, Va. (previously reported). Project is scheduled for completion in fall. Rust Engineering Co., Pittsburgh, Pa., is general contractor. Enlarged mill will have rated capacity of 50,000,000 lbs. of high-tenacity rayon yarns annually.

Bethel Silk Mill, Bethel, Conn., was destroyed by fire Jan. 27. The plant had not been operated by the silk company for several years, but a part of it was leased for the manufacture of mattresses. Losses were estimated at $50,000.

Columbus Mills, Inc., Columbus, N. C., is a newly established textile manufacturing plant, to utilize the old Katterman & Mitchell weaving mill. The incorporators of the new company are: W. S. Green, M. R. McCown and J. T. Arledge, all of Tryon. Mr. McCown is attorney for the corporation.

E. I. du Pont de Nemours & Co., Richmond, Va., has converted 40 spinning machines at the rayon cord plant from civilian to military production. The changeover of machines adds 14,000,000 lb. to the annual tire yarn capacity of the plant.

E. I. du Pont de Nemours & Co., Wilmington, Del., is considering a site near Chattanooga, Tenn., as location of a postwar nylon plant, according to E. K. Gladding, manager of the company's Nylon Division. Proposed plant will initially compare in size to the company's nylon plant at Martinsville, Va., and will employ about 1,000 persons. Du Pont is planning to increase nylon output for postwar demands, and the facilities of the plants at Martinsville, Va., and Seaford, Del., will be materially expanded.

Kahn Weaving Mills, Pawtucket, R. I., have been organized by officials of Kahn Silk Co., with local offices at 118 Main St., to operate mill. Samuel Abramoff and Jacob Kahn are heads.

Synthetic Fabrics, Inc., located in the building formerly occupied by Marion Cotton Mfg. Co., Marion, S. C., was scheduled to begin production last month of rayon tire fabric.

Tennessee-Eastman Corp., Kingsport, Tenn., is completing construction of new mill in Roane County, in course of erection for number of months (previously reported), and will place plant in service at early date for production for Government. Plant represents an investment of about $20,000,000 and was financed by Defense Plant Corp., Washington, D. C., Federal agency.

Knitting Mill News

Artcraft Silk Hosiery Mills, Philadelphia, has been acquired by Interstate Hosiery Mills, Inc., New York, by purchase of all the outstanding shares of stock. The New York office of Artcraft will be continued as heretofore.

S. Augstein & Co., 15-23 126th St., College Point, L. I., N. Y., manufacturers of knit goods, are arranging for lease of a former knitting mill at Cheraw, S. C., and plan to occupy, operating plant for time being for manufacture of uniforms for war nurses.

Beaumont Knitting Mills., Glen Williams, Ont.—Sole ownership was recently taken over by Arthur Beaumont. Plant was formerly owned by his father the late Joseph Beaumont.

Boston Knitting Mills, Newton, Mass., are erecting a storage building on California Street of metal construction. John MacDonald, Newton, has the general contract for a building 60 x 60 x 30 ft.

Camellia Mfg. Co., Greenville, Ala., which was engaged in the manufacture of undergarments for the Army and Navy, was destroyed by fire recently at a loss of more than $30,000.

Gotham Hosiery Co., New York, has signed a contract to purchase all the physical assets of General Silk Hosiery Co., Fort Wayne, Ind. A large number of General's full-fashioned machines are of 51 gauge. The acquisition will aid Gotham in meeting the demand for the finest gauges of hosiery.

Cardinal Commission Co., Burlington, N. C., has purchased former mill of Siler City Hosiery Co., Siler City, N. C., from A. Q. Siler City Co., recently organized, which acquired property a few weeks ago, with announced intentions

Picture of a man who uses S&W maintenance plan

No wonder he is pleased! For every hour of production saved by the S & W maintenance plan represents potential profit and customer satisfaction.

This is not an emergency service employed to restore operation after breakdowns but a systematic survey by the maker's service department of your knitting machines.

Our expert service organization will report just what maintenance and replacement parts will assure a standard of operation that will maintain production quotas and minimize down time and wasted yarn. Such service not only pays *now*, but gives assurance that your machines will be in efficient condition when the war ends and serious competition sets in.

The first step, an intelligent survey by S & W engineers, is made upon request *without cost or obligation.* Will you phone, wire or write now, while it is on your mind?

• • •

This much is certain... the hosiery industry will not go back to where it left off. War is telescoping years of progress into months. Here at Scott & Williams, we are planning for Tomorrow, too... in terms of the knitting machines you will need to meet after-Victory hosiery demands. If you would like to "talk things over," drop us a line.

BUY WAR BONDS FOR VICTORY

"THIS IS THE SCOTT & WILLIAMS MACHINE AGE"

ESTABLISHED 1865

SCOTT & WILLIAMS

INCORPORATED

EMPIRE STATE BUILDING NEW YORK 1, N. Y.

ATTENTION!

That's what your fabrics will get from the purchaser when you use

DRUMMOND SOAP

Here's why . . . If you have to meet Army Quartermaster Department specifications your fabrics will show a big improvement right down the line if you use

DRUMMOND SOAP

It's a high-body product of low alkali content . . . No filler of any kind . . . A high binding quality that results in minimum flocking . . . Saves on steam and water because it rinses easily and completely . . . Better fulling and scouring . . . Leaves fabric perfectly clean with softest feel, better hand, brighter colors and whiter whites . . . Want to try it? Just write us today for free working samples and test Drummond Soap on your own goods.

Protect the FUTURE of Your Business with WAR BONDS!

Standard Soap co. of camden

205 South 2nd St. Camden, N. J.

Woonsocket, R. I. G. TANGUAY 241 HARRIS AVE.

To Speed Production and Victory

The 60 models of *Scott Testers offer textile mills a wide variety of machines to speed purchasing, research and production. "World-Standard" equipment for tensile, hysteresis, flexing, burst, twist, crepeage, etc., in capacities from single hair to 1 ton.

SCOTT TESTERS

*Registered Trademark

HENRY L. SCOTT CO. 95 Blackstone St. Providence, R. I.

When You Change Your Address . .

It will help us keep your copies of TEXTILE WORLD coming to you each month if you will promptly advise us of any change of address. A penny postcard will do—but please indicate your *old* and *new* address, and any new company connection or position.

TEXTILE WORLD

330 West 42 Street New York, 18, N. Y.

of occupying for new mill (previously reported). First noted company, headed by J. C. Bolles, president, Rufus Wilson, Inc., Burlington, will hold property for use in postwar period, when it will be used for a new hosiery mill. W. W. Sharpe, Jr., formerly general manager for Mock-Judson-Voehringer at Siler City, now holds the same position with the Cardinal Commission Co.

East Pittston, Pa.—Former local mill of Alpine Knitting Co., idle for a number of years, has been purchased by Pittston Apparel Co., Pittston, Pa., which will remodel and equip for a converting plant.

Loraine Knitwear Mills, Inc., Brooklyn, N. Y., care of Jacob J. Platzman, 342 Madison Ave., New York, attorney and representative, have been incorporated with capital of $20,000, to operate a local mill for outerwear specialties.

Stetson Knitting Co., Inc., New York, N. Y., care of Joseph I. Simon, 500 5th Ave., attorney and representative, has been chartered with capital of 200 shares, to operate a knitting mill in this vicinity.

Thomasville Hosiery Mills, Thomasville, N. C., has been formed with authorized capital of $280,000 to manufacture, buy, sell and deal in hosiery, etc. Incorporators: George Blankstein, A. J. Greenberg and S. L. Peck, all of New York; Frank C. Patton, Morganton, N. C.

Tugees Hosiery Co., High Point, N. C., recently organized with capital of $100,000, by Horace S. Haworth and Owen Reese, both High Point, plans early operation of local mill for manufacture of hosiery for women.

Wayne Knitting Mills, Fort Wayne, Ind., has purchased mill of Rodgers Hosiery Co., at Athens, Ga., and will operate as branch plant for gray goods production in future, with dyeing and finishing operations to be carried out at Fort Wayne mill. Immediate possession will be taken and a working force of about 400 persons employed. The purchase gives Wayne added capacity of the finer gauges in women's full-fashioned hosiery.

Processing Plant News

Arkwright Converting Co., Spartanburg, S. C., has been incorporated with authorized capital of $10,000 to do bleaching, dyeing, finishing, mercerizing, printing and stamping of textile products. MacFarlane L. Cates is president and treasurer; Robert Z. Cates, vice-president and secretary.

Rayon Processing Co., Pawtucket, R. I., has taken out permit for one-story addition, to be used for storage. No estimate of cost announced.

Richards' Dye Works is the firm name under which Carleton J. Walters and Irene Walters have published an intention to conduct business at 538 West Fifth street, San Pedro, Calif.

Rock Hill Printing & Finishing Co., Rock Hill, S. C., has petitioned the City Council to close Laurel street from White street to the Southern Railroad. It is said that it is planned to develop the plant to utilize property on both sides of the street.

Southern Chemical Cotton Co., Alton Park, Chattanooga, Tenn., has awarded general contract to Mark K. Wilson Co., Chattanooga, for proposed expansion and changes in mill for manufacture of chemical cotton in sheet form (previously reported). Cost about $200,000, with equipment. J. E. Sirrine & Co., Greenville, S. C., are architects and engineers.

Sturbridge Printing & Finishing Co., Fiskdale, Mass.—Mill property of this company, including real estate and machinery, was sold recently at public auction to a number of buyers.

White Falls Co., Inc., New York, N. Y., care of Burke & Burke, 72 Wall St., attorneys and representatives, has been organized with capital of $20,000, to operate a local bleach and dye works.

Miscellaneous Mill News

Hesky Flax Products Ltd., Seaforth, Ont., suffered considerable damage by the fire recently.

Meredith Linen Mills, Meredith, N. H., suffered damage estimated at $1,500, when fire broke out in the carding room and damaged stock and equipment, Jan. 20.

Northwest Flax Industries, Inc., Winona, Minn., plans new branch mill in portion of plant of Klearflax Linen Looms, Inc., Duluth, Minn., being secured under lease, and will begin production at early date.

12599
SUCCESSFULLY SERVING THE WAR EFFORT . . . —
ARKANSAS PRODUCTS
Designed to meet rigid government specifications are rendering a distinct service toward the ultimate victory . . . —

MILDEW INHIBITORS

for various types of cotton cloth and yarn
non-toxic—non-irritating

FUNGICIDE M: a single product combining a mildew inhibitor and water repellent for producing a mildewproof water repellent finish on insect netting, tapes, sheeting, webbing, thread, etc., in one operation.

FUNGICIDE PG: for mildewproofing duck, plied-yarns, etc., by the two bath method.

FUNGICIDE GM: used in conjunction with water repellents in a one bath treatment to mildewproof cottons and impart a water repellent finish.

FUNGICIDE A: a mildewproofer for cloth coating processes . . . — used directly in the vinyl resin solution.

AQUAROL*: produces a water repellent finish on uniform cloth, overcoatings and other military fabrics . . . — may be used in a single bath treatment with Fungicide GM to impart water repellency and mildew resistance to cottons . . . — also used in single bath with Arko Fire Retardant to produce water repellency and fire resistance.

ARKO FIRE RETARDANT: for flameproofing uniform cloth, tentage, felts, etc.

CULOFIX L*: used as an after treatment in last rinse to prevent color bleeding in water of direct dyed cotton or rayon.

* Reg. U.S. Pat. Off.

ARKANSAS CO. INC., NEWARK, N. J.

Established 40 years

DON'T BLAME YOUR RINGS

when ring wear can be reduced by using

U. S. RING TRAVELERS

No need to tell you textile mill men about the increasing toughness of the problems of equipment, materials and production.

Every detail counts. Take for instance Ring Travelers. What you want from ring travelers is service, long life, high speed operation with least trouble. If you are using "U. S." Ring Travelers, you know we don't "pass the buck" for poor traveler performance on to a lot of other factors—rings, for instance, when ring wear can be prevented by better traveler design.

If suggestions are in order we'll give you expert advice as to whether or not, in our judgment, you are using the right type of ring—whether it can be improved or any other change that will reduce wear, make travelers last longer, serve better. Or we will design and manufacture the type of traveler that will serve best with the rings you are using. We offer you expert advice, and assure you it is based upon years of experience from all angles of this traveler business.

PERFECT BALANCE
Weighs same on both sides. Straight part of shank is in center of gravity. Distributes lubricant and wears evenly. Will not pivot twisting self and rayon.

THE NE-BOW
Prevents yarn ends flying out, provides ample head-room for threading—prevents binding on ring. Note "bend inward" at top of horn.

HEAT CONTROL
for better metal—dominates "U.S." production! Carburizing and tempering ovens are electrically controlled through pyrometers for better performance.

THE BEVEL EDGE
Great pioneering "U.S." contribution to smooth spinning twisting. Eliminating angular edges gives uniformity of tension more even yarn, less "fly."

• Sold under these trade names

Bowen Round Point Travelers
Bowen Square Point Travelers
Bowen Improved Vertical Bronze
Bowen Patented Bevel Edge
Bowen Flat Oval and Round Wire Travelers
Bowen Patented Ne-Bow Vertical
Bowen Patented Vertical Offset

U.S. RING TRAVELER CO
AMOS M. BOWEN
President and Treasurer
PROVIDENCE RHODE ISLAND

NEWS ABOUT MEN

(Continued from page 166)

Alexander J. May, in charge of wide sheeting, sheet and pillowcase department of Deering, Milliken & Co., New York, has been elected a vice president of the company.

Robert O. Huffman, president of Huffman Full-Fashioned Mills, Morganton, N. C., and of Drexel Knitting Mills Co., Drexel, N. C., has been appointed to head the knitwear and hosiery section of OPA's Consumer Goods Division.

Carroll D. Newell, vice president of Cyril Johnson Woolen Co., Stafford Springs, Conn., has resigned as chief of the Woolen and Worsted Section of the Wool Branch of the WPB textile bureau to return to his own business.

W. F. Leggett, who was formerly with the *Textile Colorist,* is now devoting his efforts to writing a series of books on the historical aspects of dyes and textiles. The first volume "Ancient and Medieval Dyes," is expected to be off the press on March 15. The second, "The Story of Linen," will go to press about April 15. These will be followed with other books on "The Story of Wool," "The Story of Silk," "The Story of Cotton," and "The Story of Spinning and Weaving."

O. J. Caron has been elected to head the Chicago Yarn Men's Club for 1944. **F. W. Kingsley** is vice president, and **C. M. Patterson,** secretary.

John F. Warner, who has resigned from Calco Chemical Division of American Cyanamid Co., has been appointed to head the development work of the Riegel Textile Corp., New York, and its two affiliated companies, Ware Shoals Mfg. Co., Ware Shoals, S. C., and The Trion Co., Trion, Ga.

Fred Wood, of Judson Mills, has been elected president of the Greenville Textile Club, Greenville, S. C., succeeding C. W. Lollis of Southern Franklin Process Co.

Wm. N. Banks, president of Grantville Mills, Grantville, Ga., and **Cason J. Callaway,** former president of Callaway Mills, LaGrange, Ga., and former president of the American Cotton Manufacturers' Association, have been appointed members of the Georgia State Agricultural and Industrial Development Board, which will formulate a comprehensive blueprint for Georgia's future.

C. L. Chandler has retired as vice president and general manager of Jackson Mills, with plants at Iva and Wellford, in South Carolina, and High Shoals, N. C. He is making his home at Gaffney, S. C.

Julius B. Goldberg has been elected to the M.I.T. Chapter of Sigma Xi, an honorary scientific society which recognizes outstanding scientific and technical achievement. Mr. Goldberg is a graduate of M.I.T., and has been connected since 1937 with J. P. Stevens & Co. as director of research. He is also chairman of the Rayon Yarn Committee, A.S.T.M.

Earl S. Dunlap has resigned as general manager of Snow White Bleachery, Inc., Royersford, Pa.

Ernest Johnston, formerly with Avondale Mills, Sylacauga, Ala., has been transferred to Stevenson, Ala., where he has been appointed general plant overseer of the Mary Ann plant of the same company.

J. D. Barbee, production manager of Brookside Cotton Mills, Knoxville, Tenn., has been promoted to plant superintendent.

Ernest R. Spuehler, who for several years was with Standard Silk Co., Phillipsburg, N. J., and for six years was designer with Susquehanna Silk Mills, Sunbury, Pa., is now with Armstrong Cork Co., Lancaster, Pa.

Ernest Shumake is the new superintendent of Fickett Cotton Mills, Inc., Whitehall, Ga. He was formerly connected with the Jefferson Mills organization.

James A. Toole has been appointed superintendent of the Manville Mill of the Manville Jenckes Corp., Manville, R. I., to succeed the late Eugene C. Hamlett. Mr. Toole has been in charge of the cotton weaving department since 1936, and was divisional superintendent of the Manville Jenckes Corp's Pawtucket plant from 1927 to 1930.

B. W. Bingham has become superintendent of Rockford Mfg. Co., Rockford, Tenn., having resigned as superintendent of Brookside Mills, Knoxville, Tenn.

F. B. Galligan is the new assistant superintendent of Firestone Cotton Mills, Gastonia, N. C.

Satisfaction from MILL to CONSUMER!

AQUA-SEC* QM

AQUA-SEC QM is the first new development of importance in wax emulsion, water repellents, since their introduction. Meeting all government requirements for water-repellency.

PURATIZED*

Lasting mildew and bacteria-resistant finish. For fabrics which must meet bacteriostatic and fungistatic properties as specified by U. S. Government. Manufactured by Gallowhur & Co., Inc.

CEGLIN*

A durable cellulose finish . . . now adding strength and durability to fabrics. Fast to kier boiling. Manufactured by Sylvania Industrial Corp.

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AQUATIZE*

AQUA-SEC water-repellent plus Puratized mildew-resistant which will pass U. S. Government Specifications.

AQUA-SEC

CORPORATION

1450 BROADWAY

NEW YORK 18, N. Y.

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—PINS—
PINS PINS
of Uniform Quality

In order to insure pins of uniform quality, we have installed a completely new HARDENING and TEMPERING Department for the production of pins of any type and in any size and quantity.

Ample Stock for Quick Delivery

WILLIAM CRABB & CO.
301 THIRD AVENUE, NEWARK, N. J.

SAVE TIME
WITH

COFFING'S "SAFETY-PULL" Ratchet Lever Hoist

Hundreds of war plants are speeding production by equipping their maintenance and construction crews with "SAFETY-PULL" ratchet lever hoists. They can easily be carried about by one man, will operate in any position, and may be used for either pulling or lifting. A real tool for those inevitable maintenance jobs.

WRITE TODAY FOR CATALOG JG6

COFFING HOIST CO.
DANVILLE, ILLINOIS

NEWS OF SUPPLIERS

(*Continued from page 132*)

Calco Chemical Division, American Cyanamid Co., Bound Brook, N. J., has transferred Frederick H. Heiss, chemist, from the company's home offices at Bound Brook, to the Chicago sales office, where he will be concerned with the sale and service of its products to paint, printing ink and pigment consumers.

The Atlantic Chemical Co., Centredale, R. I., has appointed Joseph Zaparanick as its chief chemist. Mr. Zaparanick was for six years a research chemist with The Arkansas Co., Newark, N. J. He has also been with The Onyx Chemical Co., Jersey City, N. J., L. Sonneborn Sons, Inc., New York, N. Y., and The Aspinook Co., Jewett City, Conn.

E. H. Jacobs Mfg. Co., Danielson, Conn., and Charlotte, N. C., through W. Irving Bullard president, is sponsoring a contest to secure from mill men, particularly superintendents, overseers of weaving and loom fixers, helpful suggestions that will give longer life to loom supplies thus increasing cloth production. The company will pay $5 each for the ten best and most practicable suggestions; $3 each for the second lot of ten, and $1 each for all additional suggestions accepted as usable, practicable and sensible. F. D. Lockman, superintendent of Clinton Cotton Mills, Clinton, S. C., will be the sole judge of the suggestions made in connection with the awarding of prizes. Suggestions may be sent to the Jacobs company or to Mr. Lockman.

Bailey Meter Co., Cleveland, has appointed N. M. Barnett as manager of its Chicago branch office, 1041 Marquette Building, succeeding M. Greenberg. Mr. Barnett is succeeded at Detroit by Ralph T. Cowan.

Devoe & Reynolds Co., Inc., New York, has elected E. P. Kelly of Louisville, Ky., as a member of its board of directors. Mr. Kelly is a vice president of Peaslee-Gaulbert Paint & Varnish Co., Louisville, a Devoe affiliate. Renshaw Smith, Jr., general sales manager of the company, has been appointed secretary.

Hooker Electrochemical Co. has appointed John S. Coey to its sales development department with headquarters at Niagara Falls, N. Y. Mr. Coey is a graduate in chemistry from Amherst College. For the last seven years he has been in the Manufacturing Department of the company at its Niagara Falls plant, in charge of the Process Study Group engaged in the improvement of processes, operating efficiencies, and quality of products.

The Plant Organizing Methods Co. has opened offices at 60 East 42nd St., New York 17, to "bridge the gap between the Engineering and Management aspects of Industry—particularly in textile mills." Herbert L. Werner and Rudolph M. Ashner are the principals of The Plant Organizing Methods Co. Each has had a 16-year background and experience on three continents, predominantly in textile mills. The new organization is an associate company of the Werner Textile Consultants.

Allis-Chalmers Mfg. Co., Milwaukee, Wis., has appointed A. D. Robertson as assistant manager of the motor division at its Norwood works, Norwood, Ohio. This plant manufactures all but the larger sizes of Allis-Chalmers motors.

Wickwire Spencer Steel Co., New York, has appointed H. C. Allington as sales research engineer. Mr. Allington will be in charge of the development and expansion of markets for the company's products.

Cochrane Corp., Philadelphia, announces that Harold C. Lee has joined Allan J. Harris Co., New Orleans, La. He comes from Ingersoll-Rand Co. Allan J. Harris Co., successors to Walter Castanedo, Inc., represents Cochrane Corp., and other companies.

The Calculagraph Co., Harrison, N. J., has elected Wm. C. Moodie as president, succeeding the late Henry Abbott who founded the company 52 years ago.

Industrial Supplies, Inc., La Grange, Ga., has appointed John S. Dodd as acting head, while O. F. Nixon, Jr., president-treasurer, who has recently gone on active duty as a lieutenant (j. g.) in the Navy.

Dow Chemical Co., Midland, Mich., has opened an office in Cleveland in charge of D. T. Wellman. The company has also organized a service and development division under D. K. Ballman with headquarters at Midland.

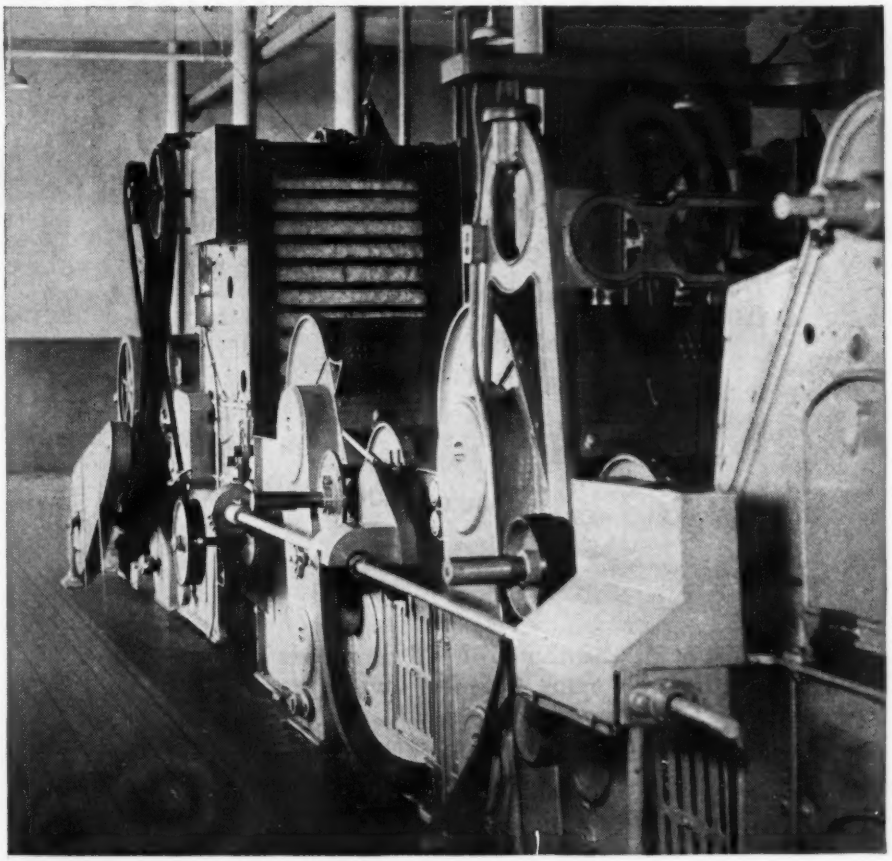
Du Pont "Three Dimensional Seeing"

HELPS SEND PRODUCTION UP 20%... CUTS WORKERS' INJURIES 10%

"Believe it is one of the best investments we have made," writes General Superintendent of textile mill

This textile mill repainted machines with colors scientifically selected to give workers better sight . . . enable them to work faster and more accurately . . . reduce accident hazards. That was Du Pont "Three Dimensional Seeing" at work.

In the following 6 months, production increased 20%, accidents dropped and workers' morale improved in the more pleasant surroundings. The Superintendent reports, "I believe that industrial plants which are not using 'Three Dimensional Seeing' are missing 90% of the benefits of a new paint job."



Light colors on this textile machinery reflect light. Seeing conditions are improved, thus helping machine operators to work more efficiently and speed up production.

What is "Three Dimensional Seeing"?

In hundreds of plants it is giving textile workers keener, faster, more accurate vision. "Three Dimensional Seeing" is a new science of color and light. It is a method of repainting dark, dingy machines with scientifically selected colors that *reflect* light . . . with colors that contrast with yarns, threads and fabrics and dangerous moving parts of the machine. In addition, walls, ceilings and floors are painted in colors carefully selected to improve overall seeing conditions and increase efficiency of existing lighting equipment.

Colors and color combinations are scientifically selected by Du Pont paint technicians to fit the individual requirements of each mill. The type of machine, the type and color of fabric, the plant lighting system—all are factors that help determine the paints to be used. Get all the facts about this new science of light and paint that is helping over a thousand plants speed production, cut accident rates and increase workers' morale. Fill in the coupon today.

DU PONT
REG. U.S. PAT. OFF.

THIS COUPON will bring you further information about the new work-speeding development, "Three Dimensional Seeing." Fill it in now . . . check the items that interest you . . . drop it in your "Outgoing" box.

E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Department TW34, Wilmington, Delaware.

I'D LIKE TO SEE:

☐ *Your latest booklet, "The Visual Way to Victory through Three Dimensional Seeing."*

☐ *The new film, "Salvaging Waste Light for Victory." Tell me how I may arrange for a showing.*

☐ *How "Three Dimensional Seeing" can be applied to my problem. Send me a Du Pont Service Engineer.*

NAME_____

TITLE_____

COMPANY_____

ADDRESS_____

CITY_____ STATE_____

9 ADVANTAGES OF AUTOMATIC MONITOR CLEANING

1 PREVENTS ACCUMULATION OF LINT.
2 ELIMINATES COST OF HAND CLEANING.
3 IMPROVES QUALITY OF YARN MADE BENEATH MONITOR.
4 ELIMINATES ACCIDENTS WITH AIR HOSE OR BROOM.
5 HELPS MAINTAIN EVEN HUMIDITY.
6 KEEPS MONITOR CLEAN AND DRY.
7 AIDS VENTILATION IN SUMMER.
8 PREVENTS WARM AIR POCKET IN WINTER.
9 ASSURES FULL PRODUCTION DURING CLEANING.

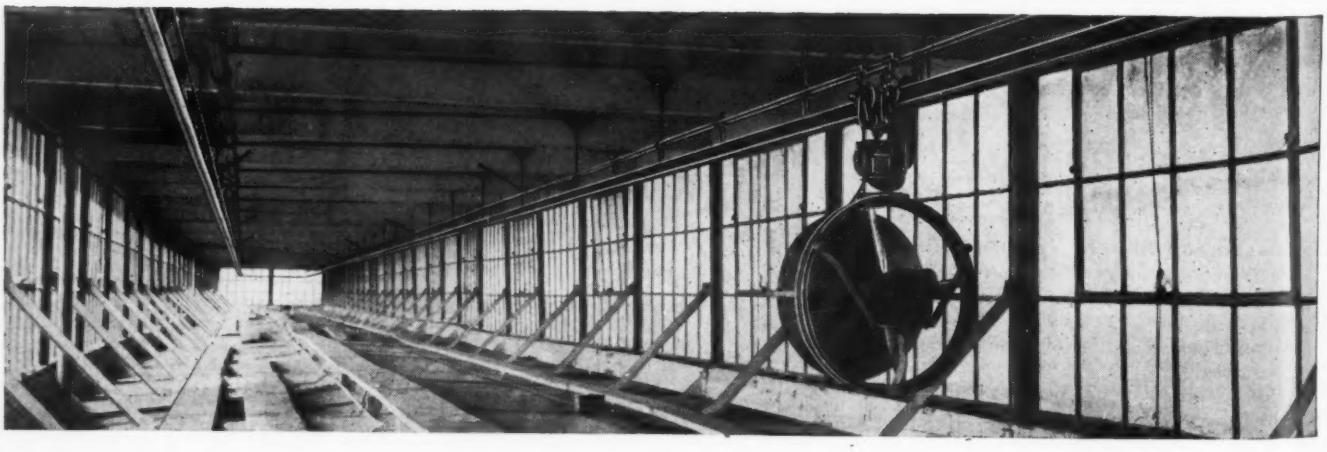
A blast of air distributed in all directions from an American Monitor Cleaner unit at regular intervals keeps the monitor in mills of this particular construction free from accumulation of lint.

Operation of such a system in textile mills shows annual savings in cleaning cost with incidental elimination of hazard. Production increases due to continuous operation of machines directly below the monitor have also been reported.

Let an American MonoRail engineer explain further details. Write for copy of book describing Controlled Cyclonic Cleaning.

THE AMERICAN MONORAIL CO.

13108 Athens Avenue ★ Cleveland 7, Ohio



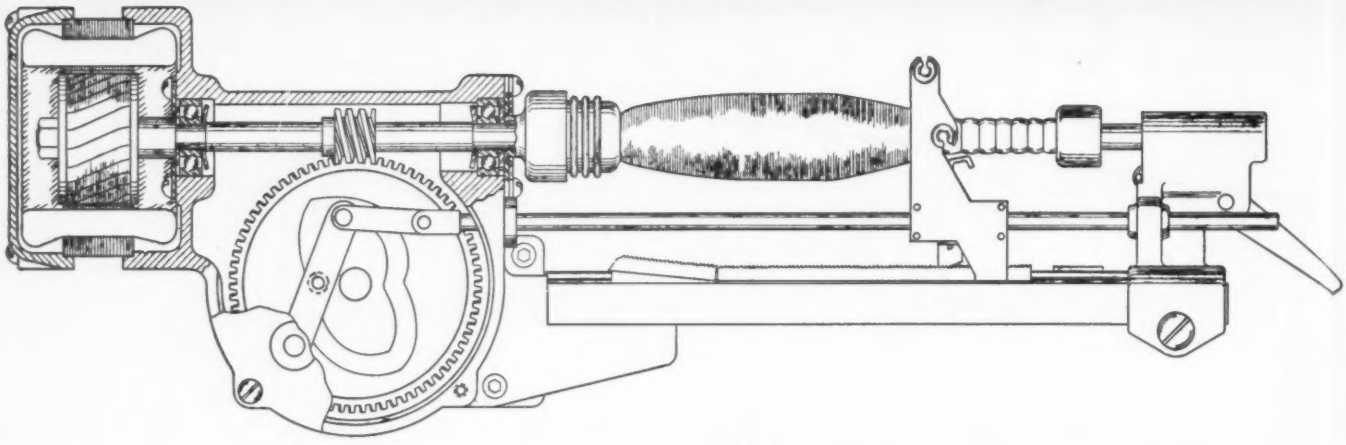
Wyandotte
REG. U. S. PAT. OFF.
CHEMICALS CORPORATION

. . . one of the world's great producers of basic chemicals

CAUSTIC SODA
CALCIUM CHLORIDE
SODA ASH
CHLORINE
DRY ICE
BICARBONATE OF SODA
CALCIUM CARBONATE
AROMATIC INTERMEDIATES
HYDROGEN

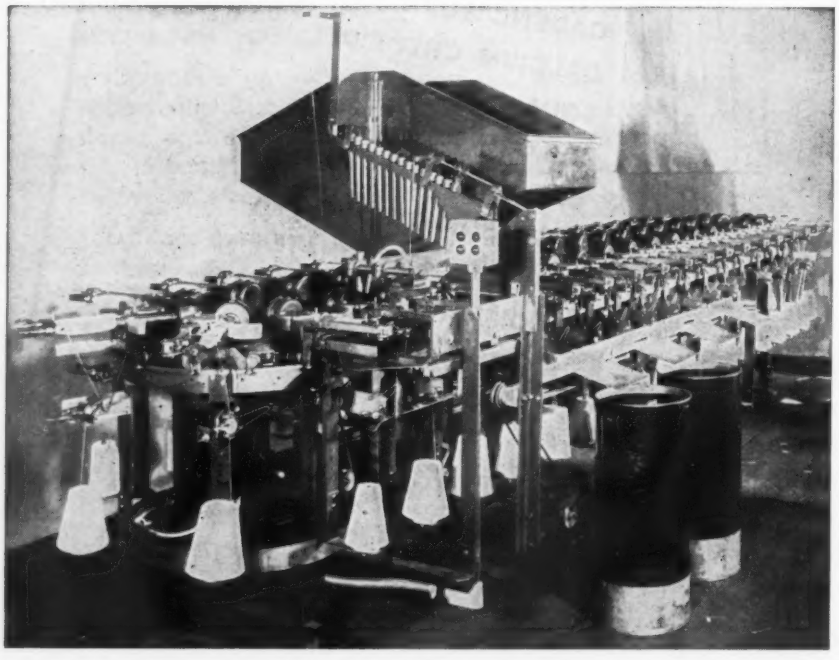
MICHIGAN ALKALI DIVISION • Wyandotte, Michigan

ABBOTT AUTOMATIC QUILLER



All there is to the winding units:—

A low voltage three phase motor drives the spindle directly
Double throw cam gives overlapping layers of wind
Diameter and shape of bobbin easily and accurately controlled by a feeler working against a stationary rack
Detectors stop motor when bobbin is full or when thread breaks
Spindle speeds up to 5000 RPM
Winds cotton, worsted, woolen, silk, rayon, etc.
Bunch is controlled by making one adjustment instead of adjusting all winding units.



Low investment cost due to simple construction, and use of ONE automatic head to serve all spindles.

Low labor cost due to feeding bobbins from a large central supply.

ABBOTT MACHINE COMPANY

WILTON, N. H.

Southern Representative, L. S. Ligon, Greenville, S. C.

CEGLIN* *wash tests*

FINISH for TEXTILES

Cool, crisp and linen like Ceglin lawns, prints and other dress constructions retain these appealing characteristics. After wash tests equivalent to repeated commercial launderings, the original resiliency is also retained.

Ceglin finish brings new values to wash goods – is simple to apply – and deserves your investigation.

Ceglin is a patented cellulose finish licensed exclusively to Sylvania Industrial Corporation.

SELLING AGENTS
AQUA-SEC CORPORATION
1150 Broadway, N. Y. City 18, N. Y.
ARIDYE CORPORATION
Fair Lawn, N. J.
The AULT & WIBORG Co.
of CANADA, Ltd.
Toronto and Montreal

SYLVANIA INDUSTRIAL CORPORATION

General Sales Offices: 122 East 42nd Street, New York 17, N. Y.
Works and Principal Offices: Fredericksburg, Virginia

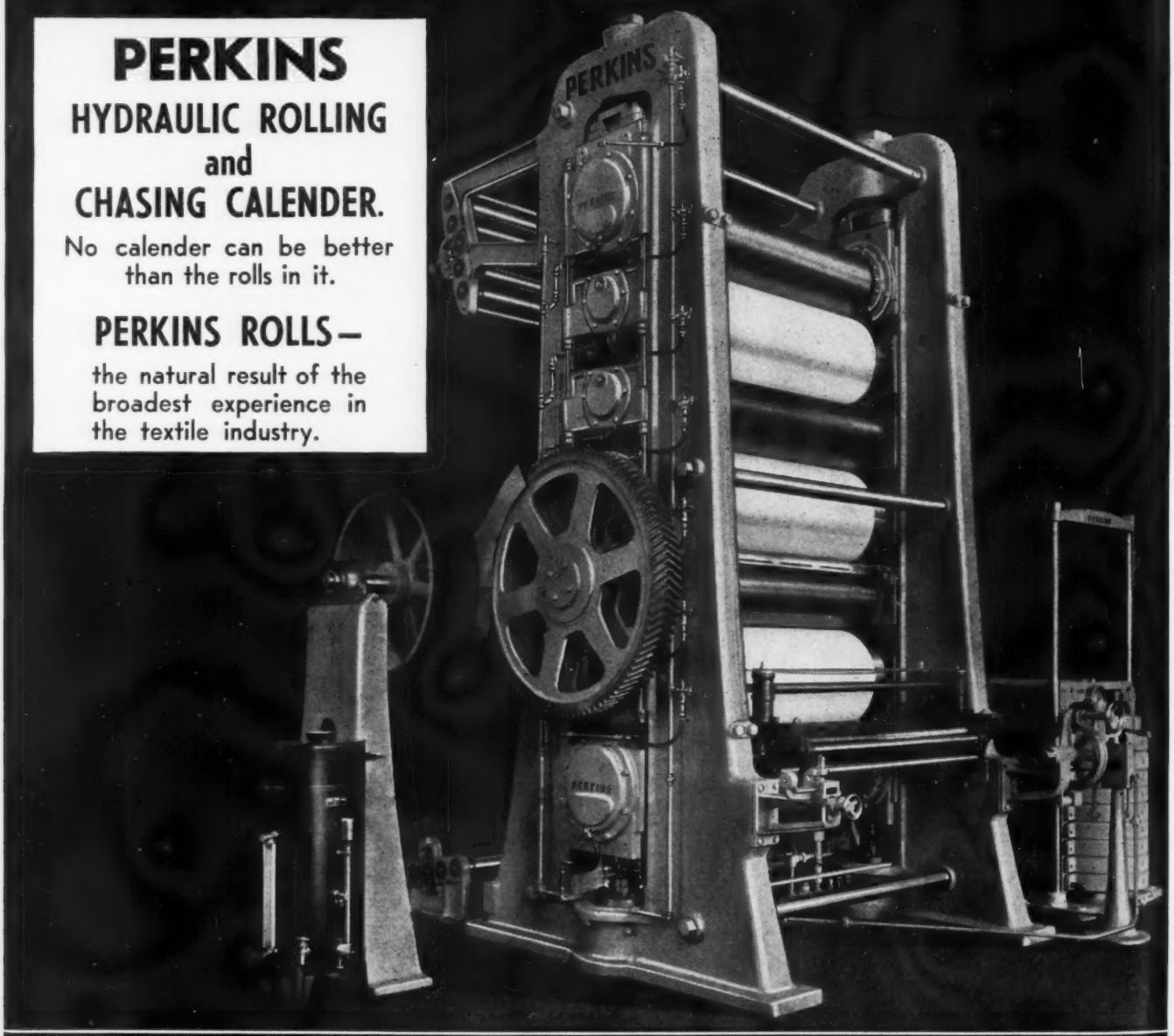
*TRADEMARK REG. U.S. PAT. OFF.

PERKINS

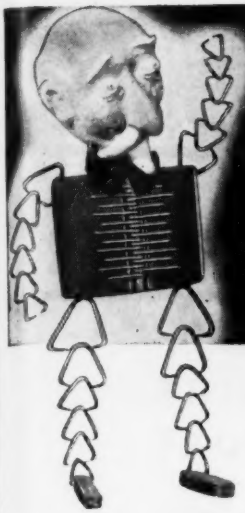
PERKINS
HYDRAULIC ROLLING
and
CHASING CALENDER.

No calender can be better than the rolls in it.

PERKINS ROLLS—
the natural result of the broadest experience in the textile industry.



B. F. PERKINS & SON, Inc.
HOLYOKE, MASS., U.S.A.
LARGEST MANUFACTURERS OF CALENDER ROLLS IN THE WORLD



SAVE 30% ON YOUR BELT LACING COSTS

The Timken Roller Bearing Co. of Canton, Ohio, has effected a saving of about 30% in consumption of belt hooks by using Clipper Belt Hooks, Clipper Lubrihide Pins and Clipper Speed Lacers.

You, too, can make worth-while savings by using ALL THREE Clipper products.

Remember, only Clipper Belt Hooks are packed with the long wearing **Lubrihide Pins.**

The **Clipper No. 9 Portable Lacer** develops pressures up to 16 tons. With such pressure, hook legs can be embedded flush with the surface of any kind of belt and points clinched.

The scientific action of the jaws forms a perfect line of well rounded loops permitting the use of maximum diameter **Lubrihide Pin,** also providing equal distribution of pulling strain on every hook. A belt joint so made will outlast by two to three times one made with an old-style portable lacer.

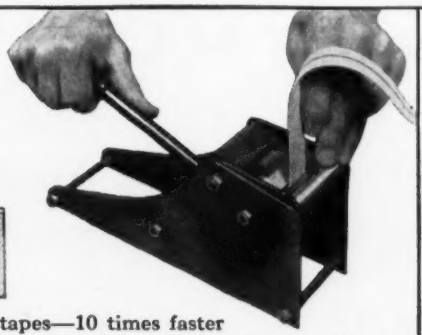
Clipper No. 9 Portable laces belts up to 6 inches wide in one quick, easy operation.

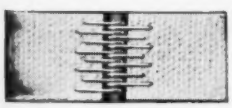
Scientific action of Jaws forms

a perfect loop for connecting pins.

We suggest that you check YOUR belt lacing situation. Send for folder describing the powerful Clipper No. 9 Portable Lacer and other Clipper products. Phone your Mill Supply Jobber for a demonstration!

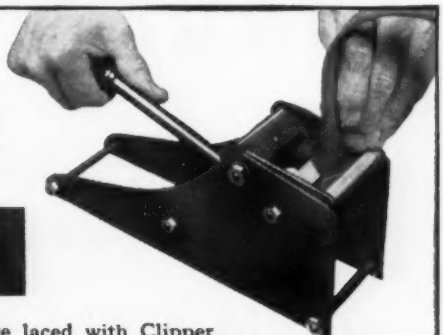
CLIPPER SPINDLE TAPE LACING EQUIPMENT

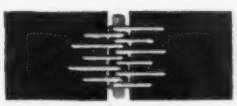




You can lace spindle tapes—10 times faster than stitching — with Clipper No. 25 Spindle Tape Hooks. The spinning frame is shut down only long enough to place the new tape on the pulleys and join the ends with the connecting pin — a short, easy operation. Tapes run true—last longer—run smoother—require less tension. VIBRATION is ELIMINATED.

CLIPPER CONDENSER TAPE LACING EQUIPMENT





Condenser tapes are laced with Clipper No. 25 Condenser Tape Hooks. The joint is as flexible as the tape itself. Clipper Laced Condenser Tapes can be installed in a fraction of the time required for endless tapes. Tape may be purchased in the roll at considerable saving, and cut to length. WRITE FOR INFORMATION.

CLIPPER BELT LACER COMPANY GRAND RAPIDS, MICHIGAN, U. S. A.

STALEY'S CAPACITY TO PRODUCE

STALEY'S ABILITY TO DELIVER

● TWO REASONS WHY MORE AND MORE TEXTILE PLANTS ARE ORDERING MORE AND MORE

STALEY'S

TEXTILE STARCHES

(UNMODIFIED and MODIFIED)

Under strict chemical control from buying of native grain through every step of processing in the huge Staley Plant

★ QUALITY ★ UNIFORMITY ★ DEPENDABILITY

TODAY AS IN WORLD WAR I ★ SERVING THE TEXTILE INDUSTRY

A. E. STALEY MANUFACTURING COMPANY

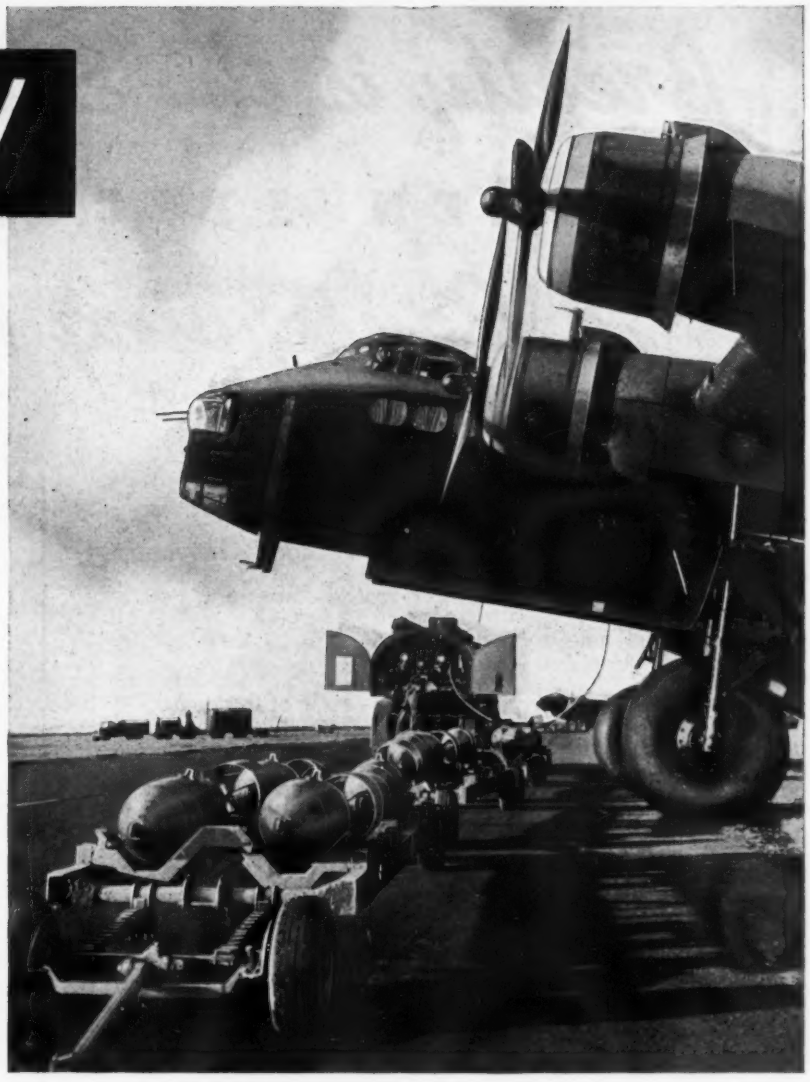
DECATUR — ILLINOIS

Staley's CORN AND SOY BEAN PRODUCTS

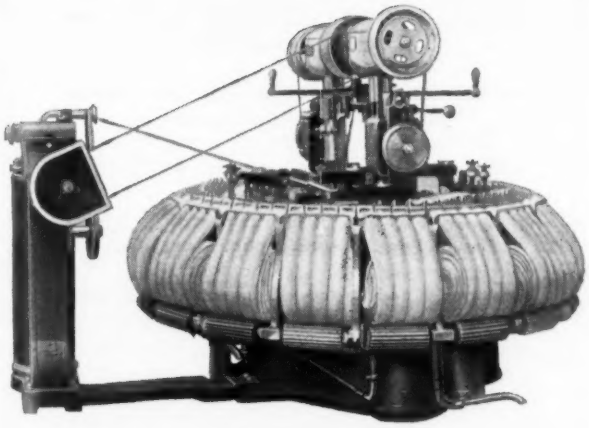
ATLANTA, NEW YORK CITY, SPARTANBURG, CHICAGO, BOSTON

NOW

ALL OUT TO WIN !



THEN-



You will no doubt wish to make alterations, replacements and possibly additions to your plant.

We commenced making Textile Machinery in 1795 and we hope that you will give us the opportunity to offer you our services.

We are makers of Combing, Drawing, Spinning and Twisting machinery on the English and Continental systems.

We also make a variety of Twisting Frames for all manner of fibres.

PRINCE-SMITH & STELLS LTD.

WORSTED MACHINERY MANUFACTURERS

KEIGHLEY (Yorkshire) **ENGLAND**

Brevity is the Soul of Wit—

WHEN IT COMES TO

Conserving Paper

SURE IT'S EASIER to let your dictation roll along. Sure it's easier to write long copy. Sure it's easier to do all the good, pleasant things of normal peacetime business when paper is like water, something you can pretty well use as you will.

But now, when the increasing paper needs of the armed services daily decrease the national supply of paper—when paper is a true war essential—that's a different story.

All of us in business must watch every piece of paper or paper board we use. We must judge its use in terms of absolute necessity. We must not use a single piece, a single inch, of paper which thriftier writing or printing or packaging can possibly save.

For multiplied on a national scale, that particular piece or inch of paper or paper board becomes the tonnage needed by our service forces to ship precious food and ammunition and weapons and medical supplies and blood plasma to our troops overseas.

If there's no Paper Conservation Committee in your organization or in your community, why not get one going today?

This advertisement prepared under the auspices of the War Advertising Council in co-operation with the Office of War Information and the War Production Board.

USE LESS PAPER BECAUSE

It takes 25 tons of blueprint paper to make a battleship.

700,000 different kind of items are shipped to the Army—and they're paper-wrapped or boxed.

"K" ration containers, shipped from the Eastern Seaboard alone, take 662 pounds of paper a month.

Each Signal Corps radio set takes 7 pounds of kraft paper, 3 pounds of book paper.

Each propelling charge for 155-millimeter shell takes 3/5 pound of paper.

USE LESS PAPER THESE WAYS

Review all printed forms periodically for essentiality; consolidation; elimination of waste space; standardization of sizes, weights, color, grade; elimination of color where possible.

Eliminate slack fills, thus effecting the economies of a smaller package.

Use 8½x5½-inch letterheads for short letters; inclose them in small envelopes.

Adjust the number of units per case to the maximum practical.

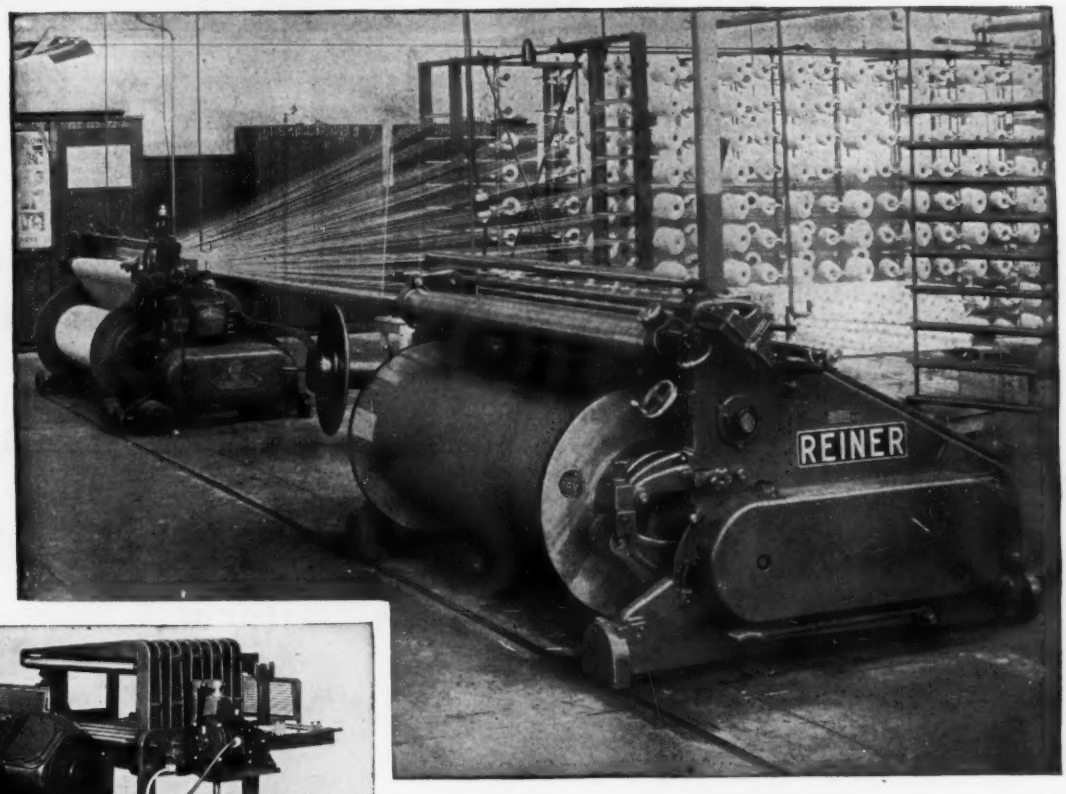
Use and re-use carbon paper consistently.

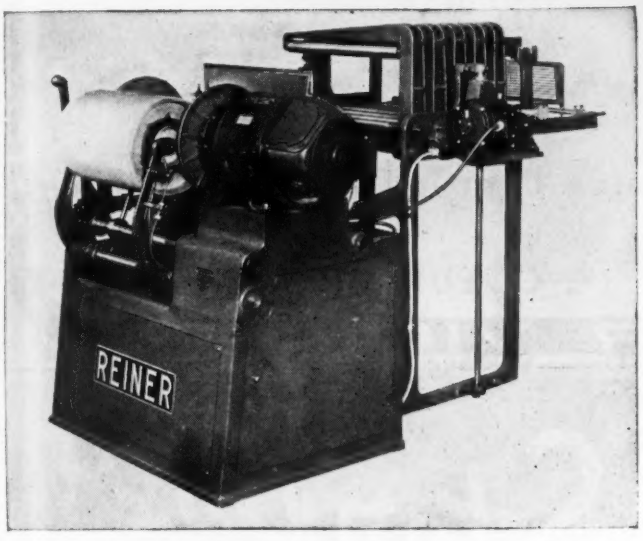
Conversely, reduce the number of units to utilize lighter carton board when such reduction will result in less tonnage over-all. Be sure that the openings are on the smallest dimension of the shipping container, so that the flaps will have the smallest area possible.

LET'S ALL USE LESS PAPER

Space for this advertisement contributed by TEXTILE WORLD

Two REINER Products for More Efficient Production at Lower Cost





REINER Section BEAMING MACHINE

Built for spools up to 18" in length with flange diameters up to 16". One or several spools may be coupled together with or without traverse motion. Special machines for spools up to 22" flange diameter and 22" long.

Stepless warping speed control from 50 to 800 yards per minute with extra slow starting speed independent of warping speeds.

The *Reiner Automatic Storage Device* (optional) permits taking off yarn from spool to facilitate repairing broken yarn ends without disturbing yarn tension.

No more efficient machine for the weaving and knitting trades has ever been developed. It may be obtained against priority rating.

Ten minutes from Times Square or Penn Station Via Lincoln Tunnel

Telephones—Union 7-0502—7-0503—7-0504—7-0505

REINER HIGH SPEED WARPER *and* CREEL

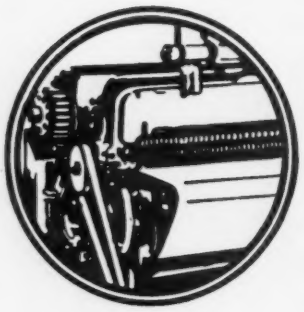
For beaming filament rayon, spun rayon, cotton, wool, worsted, linen etc.

It's an all-purpose, high speed, full width machine. Direct beam drive provides for adjustable and constant pressure of the yarn roller. Warping speed automatically adjusted with speed ranges of from 50 to 1000 yards per minute. Extra slow sensitive starting speeds independent of warping speeds.

Warpers and Creels may be obtained against priority rating. Send for descriptive catalog.

ROBERT REINER INCORPORATED
WEEHAWKEN, NEW JERSEY

WEAVE FOR VICTORY



VICTOR
MILL STARCH

"The Weaver's Friend"

Distributed by
CLAUDE B. ILER
Southern Manager
GREENVILLE, S. C.

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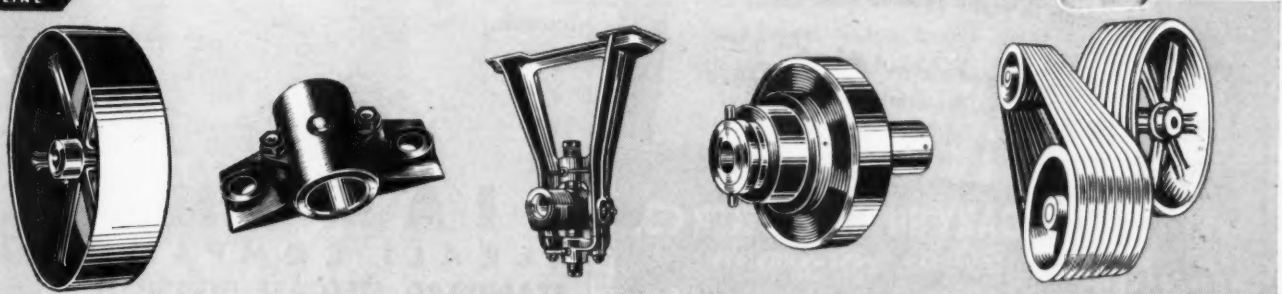

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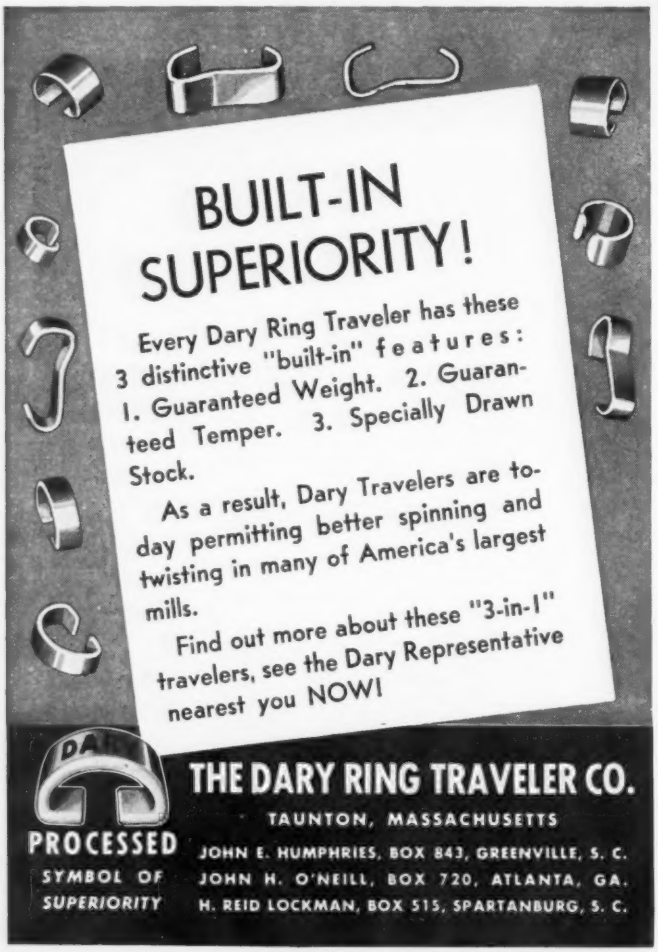
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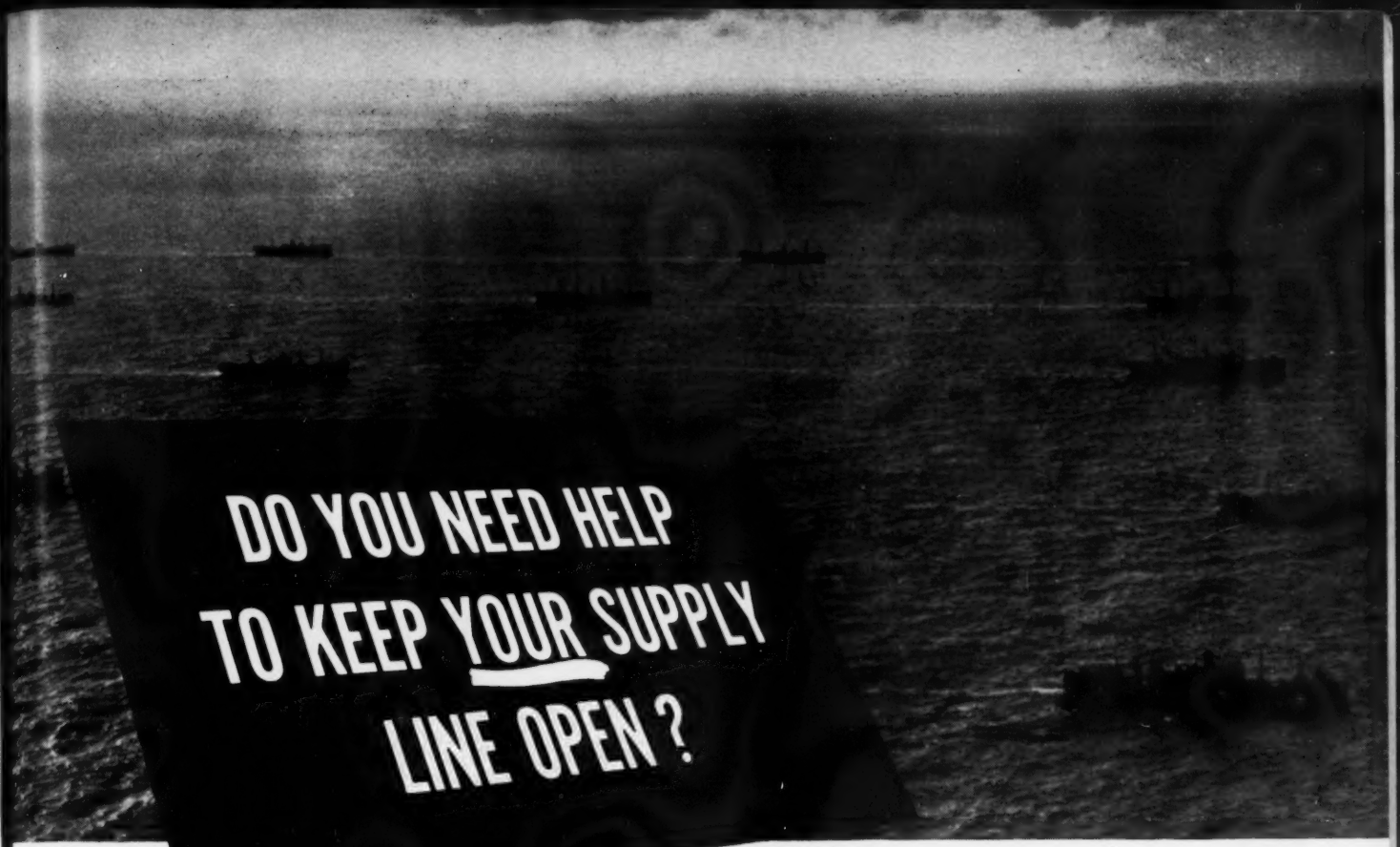

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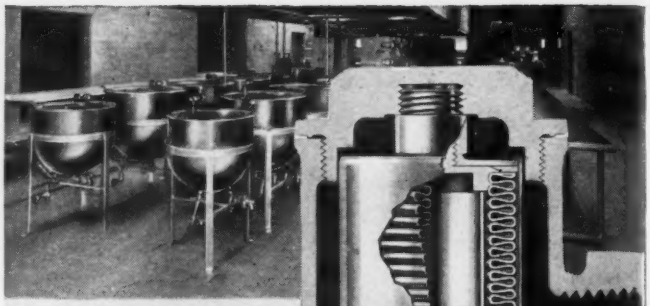

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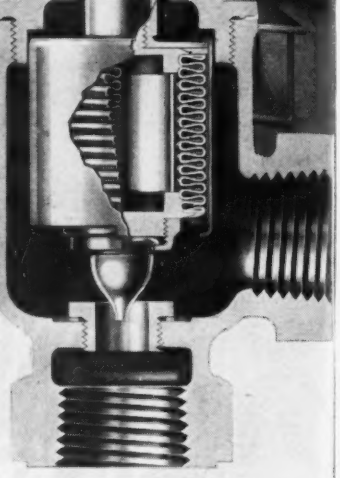
No. 9

THERMOSTATIC STEAM TRAPS



When you want maximum heat extraction and quick venting, the Sarco No. 9 is the steam trap to use. It works at all pressures within its range without changing seats. It is small, inexpensive, easy to install and cannot freeze. Sizes from ½ to 2", 0 to 250 lbs. Ask for Catalog No. 250.

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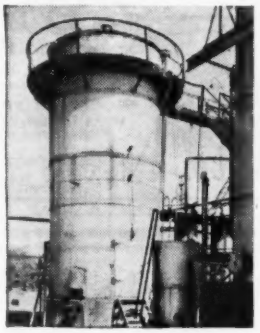
TEXTILE WORLD

330 West 42 Street New York, N. Y.

TELLURIUM LEAD DATA SHEET

SUBJECT: *Acid-Equipment Vibration*



Tellurium Lead resists vibration: In chemical handling equipment subject to vibration, the stresses resulting from the continuous, alternating movement may result in failure of the materials from which the equipment is made.

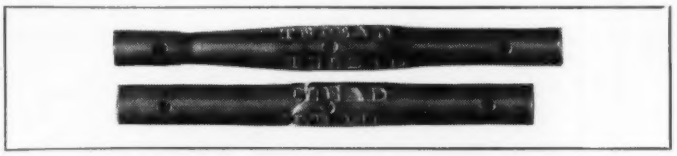
This breakdown may take the form of a crack in a tank lining or a leak in a heating coil or pipe line.

The service records of users whose statements are in our files show that in a number of instances Tellurium Lead sheet and pipe have given better service under such vibratory conditions than the materials which were previously used.

Higher endurance limit: This improved vibration resistance was borne out by a simple laboratory test in a Haigh "fatigue" testing machine. Loads were applied to test strips of lead which were subjected to rapid, repeated stresses simulating vibration. Nearly twice the load was required to fracture a Tellurium Lead specimen as a specimen of lead without tellurium. Among technologists Tellurium Lead's higher "endurance limit" is generally accepted as a measure of its resistance to vibration failure.

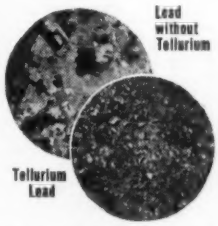
☆ ☆ ☆

Tellurium Lead's greater resistance to vibration, as well as its generally superior performance under heat changes, elevated temperatures and stress-corrosion, is believed to result from a combination of the characteristics enumerated below, which distinguish it from lead without tellurium.



1. Strengthens under stress: Tellurium Lead has the ability to "work-harden." Physical stress actually increases its tensile strength and makes it more fracture-resistant than before. For example, these pipes of Tellurium Lead (top) and lead without tellurium (bottom) were stamped with their respective names and pulled out at equal rates in a tensile testing machine. Note how the Tellurium Lead was toughened by the stamping, how it work-hardened and developed strength, whereas the lead without tellurium was weakened—and fractured.

2. More uniform grain structure: Undoubtedly another factor is Tellurium Lead's generally more uniform and finer grain structure as shown in photomicrographs at right. As a result, its surface is smoother—there is less possibility of pitting and local corrosion.



3. Higher recrystallization temperature: Another result of the addition of tellurium to lead is a raising of the recrystallization temperature.

Ordinary lead recrystallizes below room temperature. For this reason the hardness developed in lead by cold "working" is not retained. The grain structure produced by working is not permanent since, as soon as the working ceases, the grains "grow."

Tellurium Lead recrystallizes at more than 200° F. It thus retains the hardness developed by working and the grains of Tellurium Lead do not begin to "grow" until a relatively high temperature is reached. In laboratory tests, extruded strips of Tellurium Lead, annealed at 150° C. for six months, showed no grain enlargement. This freedom from grain growth at temperatures up to 200° F. is believed to be beneficial both from the standpoint of corrosion resistance and physical strength.

☆ ☆

Where it is used: Tellurium Lead is widely used in contact with sulfuric acid and sulfates, phosphoric acid and chromic acid. It may also be used in contact with pickling, electroplating and other corrosive solutions.

Among the types of chemical operations in which Tellurium Lead is employed are: chlorinations, reaction chambers, reductions, pickling, sulfonations.

Typical installations include: agitators, aprons, drums, ducts, fans, flooring, heat exchangers, heating and cooling coils, kettles, pans, stills, sulfuric acid chambers, table tops, tanks, vats.

☆

How it is applied: Tellurium Lead may be bent, seamed, flanged, burned, in the same manner as chemical lead.

WHAT USERS REPORT:

"We have installed a number of tank linings using Tellurium Lead. It has been very satisfactory in cases of hot liquor and agitation where in the past some of the upright seams have cracked."

• • •

"Tellurium Lead is used in our chlorinators for bond-coating steel agitators, thermometer wells, chlorine inlet spouts, etc., and is exposed to relatively low concentrations of chlorine and hydrochloric acid gases at 50-75° C. Its rate of corrosion is about half that of ordinary lead."

• • •

"We highly recommend Tellurium Lead for heating and cooling coils. It has also been giving very good service in agitators, saturators, pickling and etching tanks."

TELLURIUM LEAD

What it is: Tellurium Lead of our manufacture is time-tested St. Joe chemical lead alloyed with a small quantity of tellurium. It gives the advantages of this well-known chemical lead plus important new ones.

Available forms: Tellurium Lead is available in sheet or pipe form or fabricated in coils for heating and cooling purposes.

For further information or advice regarding the use of Tellurium Lead, write:

NATIONAL LEAD COMPANY—New York 6, Baltimore 3, Buffalo 3, Chicago 80, Cleveland 13, Cincinnati 3, St. Louis 1. National-Boston Lead Co., Boston 6; John T. Lewis & Bros. Co., Philadelphia 7; National Lead & Oil Co. of Penna., Pittsburgh 12; Georgia Lead Works, Atlanta; American Lead Corp., Indianapolis 6; Master Metals, Inc., Cleveland 13; The Canada Metal Co., Ltd., Toronto, Montreal, Winnipeg, Vancouver.

Photo Courtesy Pepperell Mfg. Co.

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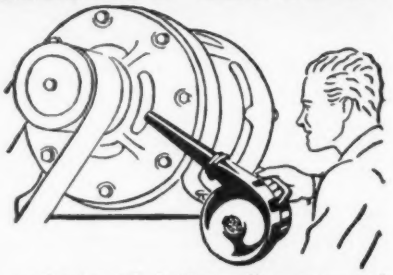

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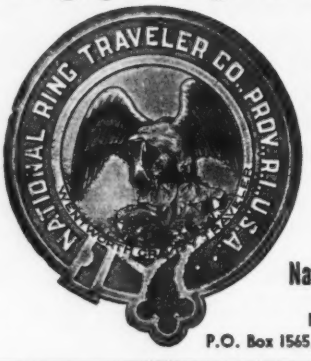

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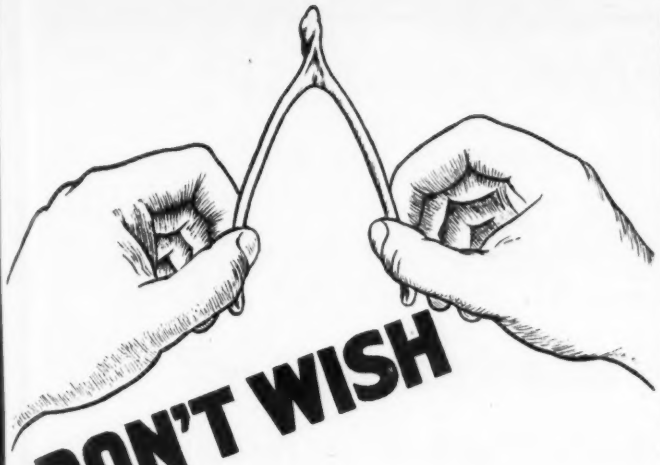

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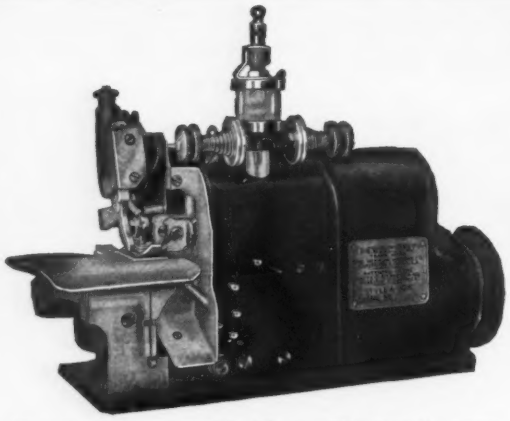

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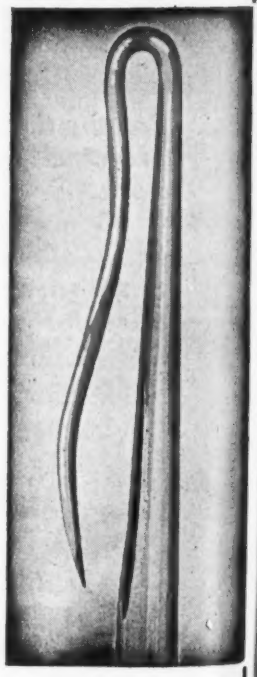

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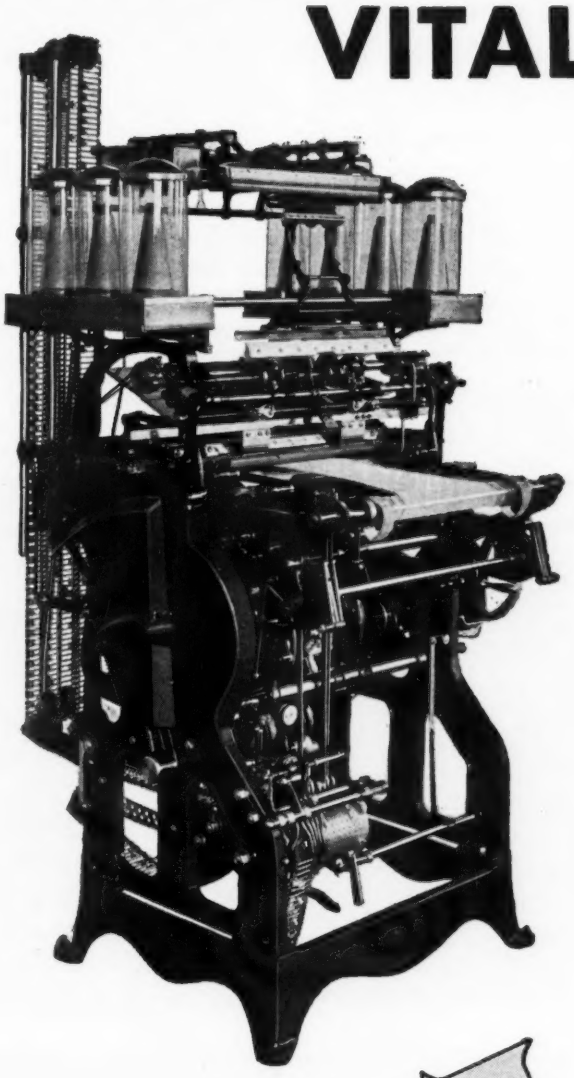

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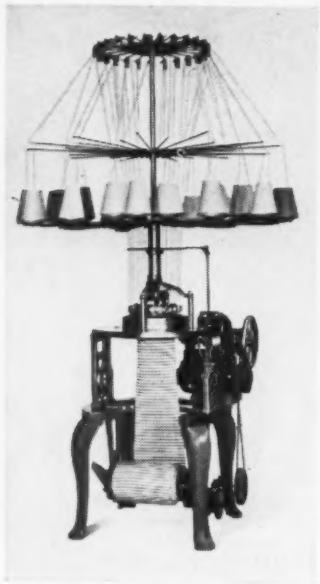

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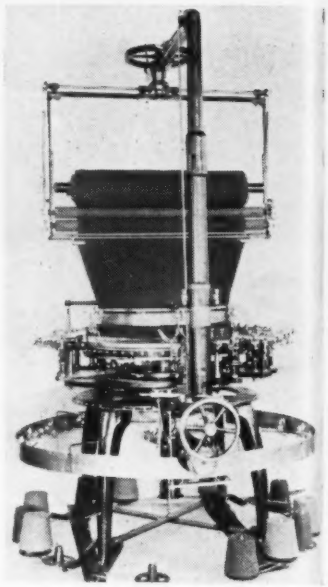

Model S-1
Single Head Spring
Needle Knitting Machine

Designed for overcoating and heavy cloths, but will run the finest underwear just as easily. Gives greater production, at lower costs, and better fabrics.

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Machine and Hand Knitting

Yarns

[French-Bradford]

for

BATHING SUITS
OUTERWEAR
HOSIERY
UNDERWEAR

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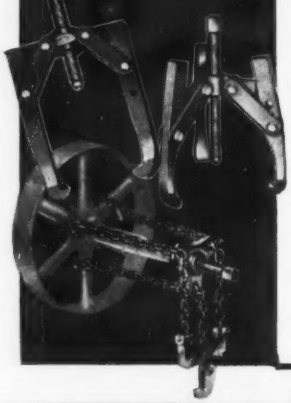
Complete color assortments

American Woolen Company

225 Fourth Avenue **New York**

ARMSTRONG-BRAY
Gear and Wheel Pullers



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STEELGRIP Standard Rigid Arm Gear and Wheel Pullers are of improved design. Will not slip from work. Arms are forged and heat-treated. 2-arm, 3-arm and special models. 12 types and sizes. CHAINGRIP Universal Pullers pull wheels, solid gears, pinions, etc., even at considerable distance from end of shaft. Proof-tested chains have both chain hooks and special pulley hooks. 3-ton and 12-ton capacities.

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SPRING BEARD KNITTING NEEDLES

For Circular, Full Fashioned, Tricot and Milanese Knitting Frames, also Narrowing, Stand, Transfer Points and Welt Hooks for Full Fashioned Machines: Slides, Sinkers, Jacks, Guides or Flat Eyes, Sley and Milanese Points, Transfer Points or Quills, etc.

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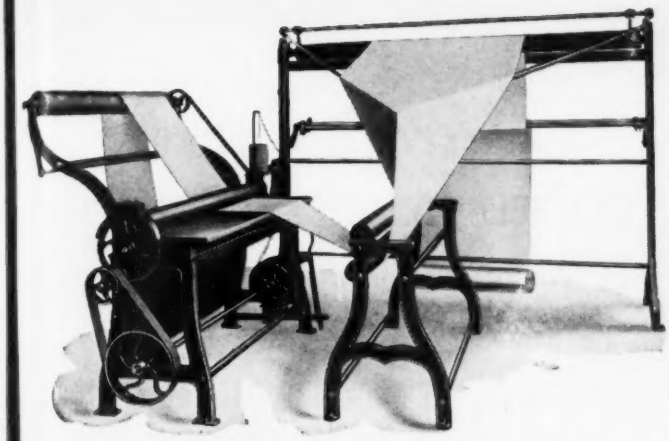

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Sewing any length stitch up to 1¼ in., making a firm, strong stitch for any weight or width of goods. This machine is equipped with our latest oscillating needle bar sewing head, which makes it the fastest tacking machine on the market for tacking the selvages of woolen and worsted fabrics. For further information, send for our catalog.

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Acme Products

for seamless hosiery knitting

Speak for themselves

Up-To-Date Machines

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FRANKLIN, N. H.

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Circular Knitting Machines
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CAN HELP YOU MEET GOVERNMENT SPECIFICATIONS ★ ★ ★

WHETHER the requisition calls for cotton, wool, rayon, silk or mixtures, there's a Laurel Oil or Finish to help meet specifications and speed delivery. If there's a special purpose compound needed, we shall be glad to suggest formulae. Laurel technicians and research department have for over 30 years sought and found solutions to many textile processing problems. This experience is yours for the asking.

Throw your scrap into the fight!

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Our technical men are at your service for any de-sizing problems.

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Textile, Laundry
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The OUTSTANDING Conditioner for Textile Fibres

- Helps separate long fibres from short
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John: Let's order new Douglas Spunray Gum for warp sizing spun rayons, spun acetates and mixtures.
Understand protects yarns like standard starches yet desizes completely in soap and water.
Jim

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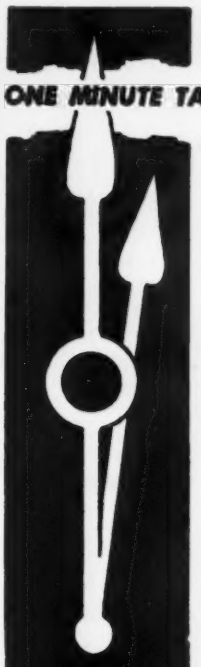

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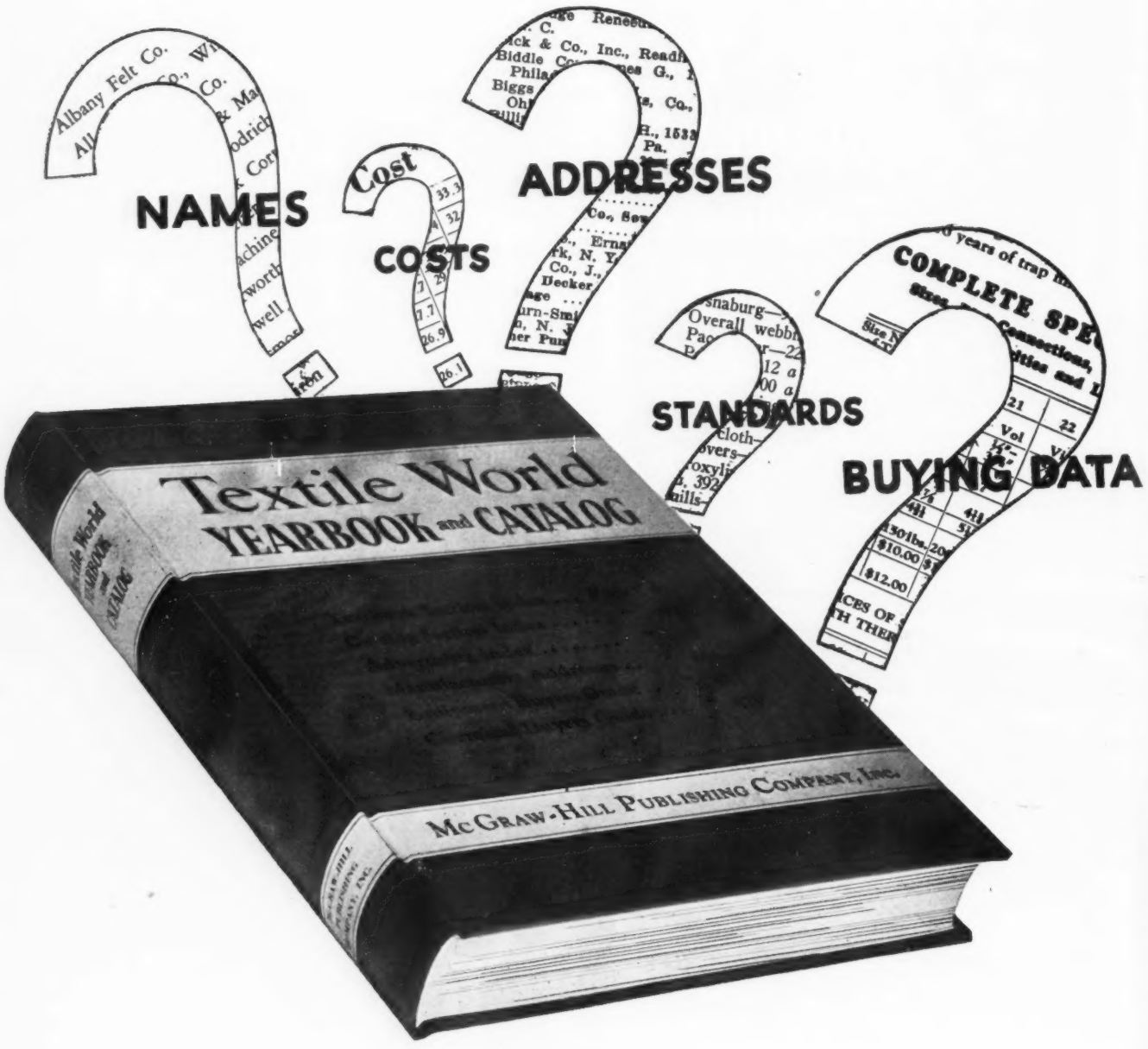

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"The Yearbook with the Orange Bands"

SEARCHLIGHT SECTION

WANTED

THROWING SUPERINTENDENT

For Pennsylvania Mill to supervise hosiery and crepe throwing. Permanent position for right man. All information held confidential. Our superintendent knows of this advertisement.

P-795, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

PRODUCTION MANAGER BRAIDED RUG MILL

Large eastern cotton rug manufacturer has opening in organization for production manager in braided rug division; excellent future for right man who must be conversant with all phases of business including raw materials, labor training, styling. State full details experience, age, compensation desired, etc. All replies will be held strictly confidential.

P-797, Textile World
330 West 42nd St., New York 18, N. Y.

JACQUARD AND NOVELTY SHAFT TEXTILE MILL, located in Pa., in preparing for post-war has the following

NEW POSITIONS OPEN:

1. Expert Jacquard and shaft mechanic who can use his hands and head for development and mechanical improvements on looms. Properly qualified man can become assistant plant manager.

2. Textile chemist who is capable of developing formulae for further improvements in skein dyeing, slashing, finishing, throwing, winding and weaving of yarns.

Please state age, references, experience, and all qualifications. Applicants are assured that their correspondence will be kept in strictest confidence.

P-794, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

Superintendent

For an eastern rayon weaving plant of about 300 automatic box looms. Applicant must be familiar with latest types of machinery, as well as modern methods of handling synthetic yarns.

Charles P. Raymond Service, Inc.
294 Washington St., Boston, Mass.
Over Forty-five Years' Confidential Employment Service

WANTED

Experienced Rayon Throwster

Must be familiar with all throwing operations. Applicant's background and experience should be such as to equip him to eventually become Superintendent in a large throwing plant.

Give full details as to age, draft status, education, experience, and salary expected, in letter of application to

P-793, Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED

FIXERS

For Scott and Williams hosiery knitting machines, steady employment.

P-766, Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED

Weave room overseer for second shift. Must be thoroughly experienced on C. & K. hand looms and C. & K. S-3 looms running on acetates, taffetas, and Bemberg sheers. Mill locatd in southern part of Virginia. Please give full details and salary expected in letter to

P-792, Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED

SUPERINTENDENT

Eastern Pennsylvania cotton rug manufacturer offers excellent opportunity to the right man: Knowledge sewing machine operation desirable; weaving experience and knowledge yarns essential. Must have ability handle personnel successfully. Should be ambitious, aggressive, resourceful. State full details, age, draft status, education, experience, starting salary desired.

P-796, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

Experienced Practical Superintendent

For modern medium-sized rayon weaving mill specializing in print fabrics. Must be familiar with Draper and Crompton-Knowles looms. All replies kept confidential. Please furnish references.

P-805, Textile World
330 W. 42nd St., New York 18, N. Y.

POSITIONS VACANT

PLANT ENGINEER for viscose rayon manufacturer. Rayon experience not needed but desirable. Must have successful record of broad experience as plant engineer or assistant engineer. Plant located in New England. Permanent position. Give complete details of training and experience, references, draft status, availability, salary desired and photograph. P-770, Textile World, 330 W. 42nd St., New York 18, N. Y.

TOMPKINS MECHANIC wanted, to be assistant foreman in charge of night shift. P-798, Textile World, 330 W. 42nd St., New York 18, N. Y.

SUPERINTENDENT for small narrow fabric weaving and braiding plant in eastern Penna. Knowledge and experience in narrow fabric weaving essential, braiding desirable. Would also be expected to learn and supervise production of our non-woven products. State age, education, experience, salary desired. Write P-799, Textile World, 330 W. 42nd St., New York 18, N. Y.

CHEMIST WANTED—with textile training as assistant to head chemist with large rayon dyeing and printing plant. P-800, Textile World, 330 W. 42nd St., New York 18, N. Y.

DYER—Experienced rayon acetate for progressive metropolitan high standing plant. Permanent post war position assured. State in detail school and plant experience, salary desired, age and man power situation. P-801, Textile World, 330 W. 42nd St., New York 18, N. Y.

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EXPERT FINISHER of woolen fabrics, Textile School of Cottons graduate; now employed in Chile by a leading manufacturer. Seeks position in U. S. Chilean, 37 years old, single. PW-802, Textile World, 330 W. 42nd St., New York 18, N. Y.

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Can reduce your costs.

Will coordinate your problems in Maintenance, Repairs, and NEW installations for steam & water Power—machinery—Buildings Fire Protection—Labor relations—Purchasing. Age 46—American—13 yrs Plant Engr. and Mech. Supt. in medium and large wool and cotton Mills. Now employed but desire greater responsibilities. Business Record may be obtained by writing to

PW-806, Textile World
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Over 45 years' confidential employment service for men seeking positions and employers seeking men.

SEARCHLIGHT SECTION

POSITIONS WANTED
(Continued from page 209)

PRACTICAL PURCHASING AGENT. I have a friend who, I believe, would make some firm a good practical purchasing agent. He not only has had practical experience in all departments of a cotton mill, but now does the purchasing for a small plant as a part of his duties. About 40 years old. Draft class 3-AH. If interested, may I send him to you for personal interview. F. Gordon Cobb, Box 2671, Charlotte, N. C.

RAYON THROWSTER—desires position as manager or throwing superintendent. Broad experience in throwing rayon crepe and hosiery yarns. 23 years textile experience. Married, 1 child. Age 43 years. PW-803, Textile World, 330 W. 42nd St., New York 18, N. Y.

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MANUFACTURERS—if you have any Washington problems, either Governmental or private business, or lack manpower to service Washington field, both Government and private business, and all services rendered by us are at reasonable cost and in strict accordance with established Government Regulations, specialists in renegotiation and qualified also for distributorships. Write RA-755, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED

WANTED BY ONE WHO KNOWS the exact spot where each item is most urgently needed. Any type yards, natural or dyed cotton, rayon, acetate. Cash. W-762, Textile World, 330 W. 42nd St., New York 18, N. Y.

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Interested in purchasing
Medium Capacity Operating
WOOLEN MILL
Women's wear preferred. Would also consider yarn mill. Please mention approximate price and equipment data.
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25—Barrels—54".
62—22"; 172—24"; 10—25"; 24—26" Cast Iron Hds.
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89 Pr.—24" Mossberg, steel—5—29/32" barrel.
300 Pr.—24" Allen, wood—5—⅝" barrel.
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65 Pr.—17" & 18"—Gear & friction.
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76—Draper 30" Model E used looms in good condition. Complete with Lacey top motions, pulleys, shafting, beams, etc. Located in South.
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17—355, 528, 730 & 1100 ft. Cap.
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25,000, 50,000, 70,000 & 100,000 Gal. Cap.
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Your Obsolete Sewing Threads
Send samples and quantities for quick disposal.
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4—90" multineedle
QUILTING MACHINE
In perfect condition
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Chemicals—Dyes—Gums Waxes—Lacquers
Also Textiles of All Kinds
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330 W. 42nd St., New York 18, N. Y.

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FACTORY APPRAISALS
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Kettling & Braun Semi-decating Machine
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40" or 48" Mixing Picker
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Three Textile Heavy-Duty Bleaching Pressure Cookers
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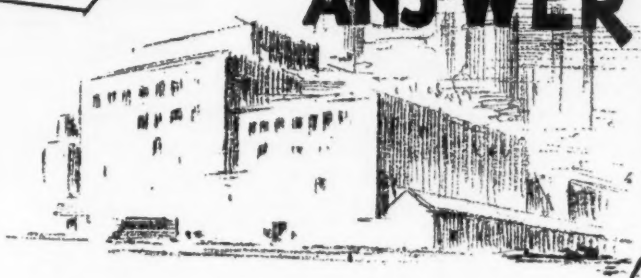
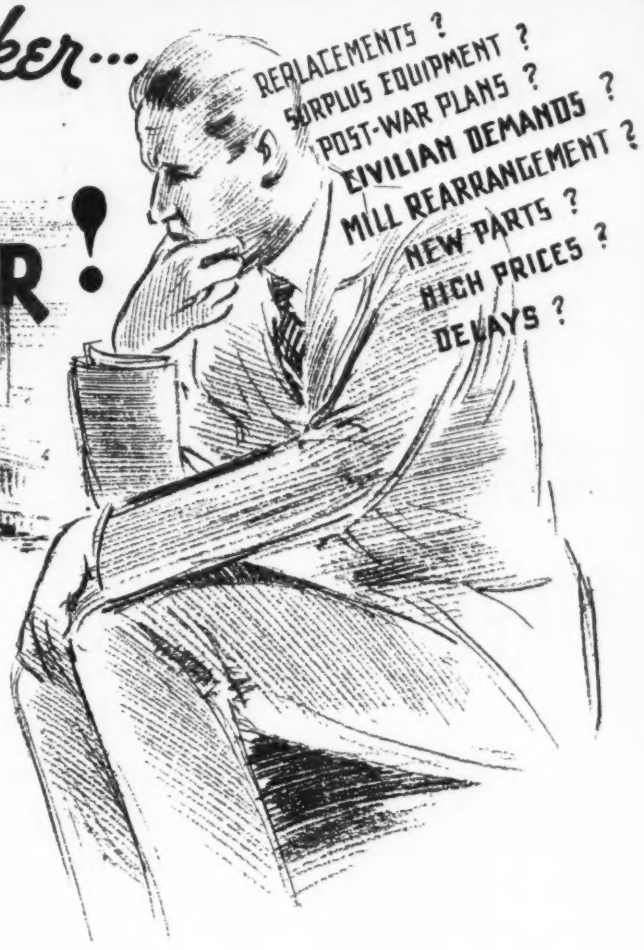
MLC HAS THE ANSWER!





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1—24" Empire Extractor
1—36" Empire Extractor
1—48" Tolhurst Extractor, Belt Driven
4—42" Elliott & Hall Folding Machines
1—40" Elliot & Hall Folding Machine
4—46" Elliott & Hall Folding Machines
1—6 delv. Whitin Drawing Frame with 12" coiler
2—Schultz Fulling Mills
58—38" Model E Draper Auto. Looms
3—110 Spindle Hopedale 3" Ring Twisters
1—56 Spindle Draper 2½" Ring, 3½" Gge Twister
1—44" Simplex Winding & Measuring Mach. Mtr. dr.
1—Barber Coleman Auto. Warp Tying Mach., size 4-E.

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8—Whitin Model "C" Combers

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50—52" C & K 4 x 1 Auto. Looms, 56½ R.S. 25 Har. Bell Driven
6—82" C&K (4x4) 25 Harness Woolen Looms
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1—66" Voelker Cloth Press
1—Schulze 106" Double Shear
3—204 Sp. Lowell 2¼" Ring Band dr. Spinners
9—264 Spindle Whitin Spinners 1¾ R 3" Gge.
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MACHINERY LIQUIDATING COMPANY

OPA REGISTRATION NUMBER 789

EST. MLC 1923

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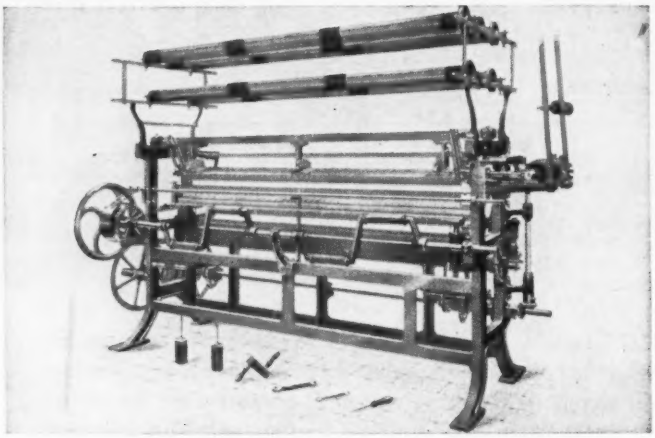
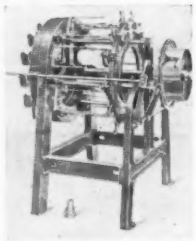


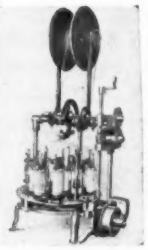


BRAIDING MACHINES of all types for use in the manufacture of parachute cords, military cords, flat tapes, rugs, elastic tapes and braids, wire cords and braids, etc.

TWISTING MACHINES, in various makes, for hundreds of uses such as: cords, twines, rope, guimpe, wire, etc.

KNITTING MACHINES for use in the manufacturing of nettings, cloths of all types, rug materials, curtains, elastic girdle fabrics, hosiery webbing, shoe cloths, pocketbook materials.

WINDING MACHINES of all types and makes for threading, winding and spooling.



We have been handling the above type of equipment for the past 20 years and solicit any and all inquiries for anything in textiles.

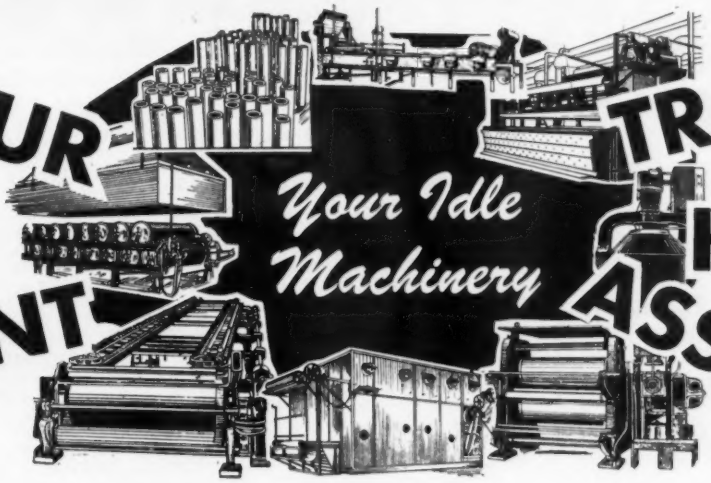
All the above priced reasonably for quick sales. Quite a few of these knitting and braiding machines are set up on our floors, where all the machines are located. What we mean by set up, is the machines are in operating conditions with material such as nets, rugs, dish cloths, cords, flat plain and fancy braids in them, for inspection and operation.

ROBERT SOLOMON & CO., Inc.

TEXTILE EQUIPMENT SPECIALISTS

162-168 Greene Street **New York, N. Y.**

SABOTEUR — TRAITOR — ENEMY AGENT — KILLER ASSASSIN



Your Idle Machinery

Yes, idle equipment should be PRODUCING war materials or helping some manufacturer convert to meet changing industrial conditions. Every day — every MINUTE it stands idle it works for HITLER or HIROHITO just as surely as if it was a deadly gun or bomb or torpedo. Send us your list of idle equipment NOW — A single item or a complete plant!

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3—P. & W. Double Blade Shears, 60" with list saving device.
1—P. & W. 3-Blade Shear, 60½" with list saving device.

BLEACHING
8—Bleaching 4-5 ton Kiers, vomit type.
1—5-ton Kier, circulating type.
2—Lincoln 2-Roll Rope Squeeze Rolls.

LOOMS
42—Crompton & Knowles, 82" 4 x 1 Automatic Looms.
25—Crompton & Knowles 100", 4 x 4 Blanket Looms.
100—Crompton & Knowles 50" Rayon Looms.
94—Draper Automatic Model E 44" Looms.

BEAMERS—BATCHERS
4—Van Vlaanderen 50" & 55" Beamers.
20—50" & 60" Batchers.

EXTRACTORS
4—V.V. & Tolhurst 60" rubber & copper basket Extractors.
10—V.V. Fletcher & Tolhurst 40", 44", 48" Extractors, copper lined.
12—Tolhurst, American Laundry, Adams, Troy & Bach Copper Lined Extractor, 17", 20", 26", 28" & 32".

WATER SOFTENERS
1—Permutit Water Softener, 103" hg. 63" wd.
2—10 x 10 Vertical Softeners, Zeolite.
2—Pressure Sand Filters, 8" dia., x 20' lg, complete with pipe and valves.

WORSTED & COTTON SPINNING FRAMES
24—Ring Spinning Frames, 160 spindles, 8½" pitch, 8" travers, 1¾" ring, 4" front roll.
14—Lowell Cotton Spinning Frames, 3" gauge, 2" ring.

PRINTING MACHINES
10—R. B. & F. 1 to 10 color Print Machines, 40" to 64" wide, complete.

AGERS
1—Cast Iron Ager, 18' x 60".
1—Cast Iron Ager, 12' x 66".
1—30' Steel Ager.
1—Haveg Patch Ager.

KETTLES
20—Textile Copper Steam Jacketed Color Kettles, tilting type, agitated, 24 to 100 gallons capacity.

CALENDERS
2—V.V. Ball bearing Calenders, 50" & 60".
2—McCreary 50" & 54" Knit Goods Calenders.

DRYERS
3—National Loop Dryers, 28', 33' & 65' lg.
1—Phila. Dry Mach. Co. Hurrican Continuous Skein Dryer.
1—P. & S. 72" Raw Stock Dryer, Automatic Feed.
1—Phila. Raw Stock Dryer, 48" Automatic Feeder.
1—P. & S. 36' Loop Dryer, 90" poles. Rebuilt by National. Equipped with high speed booster fans, airfins.
1—Single Truck Dryer.
1—60" Dry Tower for print machine, air fins.
3—P. & S. and Sargent Conveyor Dryers.

FULLING MILLS
6—Rodney-Hunt Fulling Mills, gear drive.
2—Single Line Fulling Mills, rubber rolls.

CAN DRYERS
450—Dry Cans, 50" to 108" face, 23" to 84" dia.

DECATERS
1—Gessner Full Decating Machine, 72" wide.
2—Gessner semi-decating machines, 50" & 72" wide.

PADDERS, MANGLES, QUETCHES
4—Textile 50" 2-Roll Dye Padders.
5—Butterworth 50" 2-Roll Starch Mangles.
2—Textile 80" 2-Roll Mangles.
8—Butterworth & Morrison 2 & 3-Roll Quetches, 50", 60", 64" & 72" wide.
5—Quetches, 2 & 3-Roll, 36-72" wide.
1—James Hunter 50" Water Mangle.

PUMPS
2—Deep Well Pumps.

PRESSES
1—Logemann All Steel Paper Baler.
2—Schiem & Economy All Steel Presses.
1—Gessner 72" Wool Press.

SINGEING MACHINE
1—80" 2-Burner Singeing Machine.

BUTTON BREAKERS
3—Morrison & V.V. Button Breakers, 50", 60", 72" brass rolls.

STEAMING & FINISHING MACHINES
3—Steaming Machines for Tubular Goods.
2—C & M Finishing Machines for Tubular Goods.

EXAMINING MACHINES
2—Examining Machines for Tubular Goods.

SCOURING & DYEING MACHINES
2—Haveg Dye, or Washing Machines, completely enclosed, 51" wide.
1—Sargent 3-Bowel Skein Scouring Machine.
3—Klauder-Weldon Skein Dyeing Machines.
1—Obermaier 400# Package Dyeing Machine.
1—Sargent 4-Bowl Wool Scouring Washer, 48".
1—Rodney Hunt 7-String Dyeing Machine.
1—Berks All Monel Metal 4-Pocket Rotary Dyeing Machine.
1—Obermaier Combination Package & Rawstock Dyeing Machine.

NAPPERS
8—D & F, Woonsocker & P & W Nappers, 60" to 90".
1—Gessner 20-Roll 66" Double Acting Napper.
1—60" Box Napper.
2—Single Roll Nappers or Brushing Machines.

DYE JIGGS
6—Dye Jiggs, 54" rubber covered rolls.
1—Battery 4-Butterworth stainless steel lined Dye Jiggs, 45".
1—Battery 4-Morrison stainless steel lined Dye Jiggs, 50", tilting expanders.

SEWING MACHINES
5—Merrow 60ABB & 60D3B Sewing Machines on tracks.
4—Merrow 60ABB & 60D3B Sewing Machines on portable stands.

CONDITIONING MACHINES
2—Sjostrom Cleaning & Conditiong Machines.

DOUBLERS
8—P. & W. & Windle 46-66" Doubling, Reeling & Measuring Machines.

PALMER QUETCHES
3—Morrison & V.V. 50", 60" & 72" Palmer Quetch Units.
1—V.V. Palmer Quetch Unit, low type, 65" wide.

COUNTERS
250—Waltham Pick Counters.

MISCELLANEOUS
Skein Reeler Universal Tubers & Winders, Gas Boiler, Scutchers, Expanders, Sewing Machines, Trucks, Generator Sets, Motors, Rubber Lined Tanks, Modine Heaters, Exhaust Fans, Pleaters, Mandrils, Doctor Blades, Gears, Lathes, Portable Agitators, Accumulators, Wood Shells, Weidemann Control Unit, etc.

DYE BECKS
25—Butterworth, Morrison & V.V. 6' & 8' Dye Becks, stainless steel and wood tubs.
10—Morrison & V.V. Dye Becks.

TENTER FRAMES
1—W. & J. 95' x 50" Swing Tenter Frame.
1—30' Swing Tenter Frame.
1—Heathcote Pin Tenter Frame.
2—25' Pin Tenters.

FLAT FOLDERS
4—Elliot & Hall Flat Folders, 42" to 60".

OPEN WASHERS
1—Continuous Full Width Washer, consisting of 3 sections, 4 nips, each section, 66".
1—60" Continuous Boil-Off Machine, steel tanks.
1—Van Vlaanderen 18-compartment Print Washer.
1—Van Vlaanderen 60" Open Washer.
1—Textile 8-compartment Open Washer.

ROPE SOAPERS
1—Van Vlaanderen Continuous Square Formation Washer.

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FOR 25 YEARS A TRADE OF CONFIDENCE

CONSOLIDATED
SUPPLYING TEXTILE EQUIPMENT FOR THE
DYEING BLEACHING WEAVING
FINISHING PRINTING SPINNING
of
RAYON COTTON WOOL
WOOL FABRICS and WORSTEDS

ATTACK — KEEP BUYING WAR BONDS

FOR SALE

WARP DYE MACHINES

Two—Reliance five bowl warp dye kettles. With iron rolls 42" face by 12" diameter.

Three—Reliance single bowl warp dye kettles. With iron rolls 20" face by 12" diameter.

Five—Reliance warp dye kettles, single bowl. With iron rolls 38" face by 12" diameter.

Equipped with motor and motor drive.

WANTED!

STEEL CREELS

Over-end Type—Spindle Spacing 7" or more. 300 to 600 ends. Cone or tube.

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c/o Sales & Salvage Division

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Upland, Delaware County, Pa.

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BUTTERWORTH CALENDAR

7 ROLLS—80" FACE

8 Composition Rolls, 4 Steel Rolls, Hydraulic lift —water-cooled journals. Located in South.

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Electrified Monorail System

purchased new in June 1940

9—#296—2 way glide type switches
2—#298—2 way glide type switches
13—90° Girder type curves
170 feet #401 straight track
1—2 ton Type B Yale Electric hoist with 16 wheel load bar
1—Air Wheel Motor driven tractor
1—Fairbanks Morse 5000 lb. Track Scale

All this equipment wired 550 V, 3 phase, 60 cycle

THE HARTFORD RAYON CORP.

Rocky Hill, Connecticut

FOR SALE

Five Bromwell Hopper Feeders, 40"
One Curtis Marble Slitter, 48"

All this machinery in good condition

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OF AMERICA
VALLEY PARK, MISSOURI

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1—100-spindle

BUHLMANN SKEIN DYEING MACHINE

All monel metal tanks and piping including 5 HP motor.

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EXCEPTIONAL VALUES - - - - - PROMPT DELIVERY

4—WASHERS 6, 8 and 12 String.
6—TWISTERS Novelty 2½" Ring.
1—TUBER 60" with measuring clock.
4—SHEARS 36" to 88" Single & Double Blade.
5—SEWING MACHINES Rotary Foot Power.
5—SQUEEZE SETS 40" to 66" widths.
1—SCOURING UNIT, Yarn 3 Bowl.
2—ROTARY STEAM PRESSES 66½" & 80".
2—QUETCHES 44" and 50" 3 roll units.
1—PALMER 60"x60" Blanket & Dry Cans.
4—NAPPERS 80" & 84" D.A. 24 & 36 Rolls.
1—NAPPER KNITGOODS 72" D.A. 20 rolls.
1—NAPPER S.A. 90" 14 rolls.
2—LOOP DRYERS, Unit Heaters.
1—JIGG 60" Copper Lined.
2—EXTRACTORS 48" & 60" Mtr. Driven.
1—GRINDER, Napper rolls up to 86".
3—DOUBLERS 42" to 60" with clocks.
1—DOUBLING & FOLDING Unit 60" folds 18" to 40".
1—CALENDAR FRICTION 42" 3 roll.
1—CALENDER 5 Bowl 47" MYcock Expander and Chasing rolls.
4—Sets WOOLEN CARDS 48 x 60.
10—MULES 1⅞" Gauge 480 Spindle Units.
6—TAPE CONDENSERS for 60" and 72" Cards.

Miscellaneous: Bristle Brushes, Brass & Wood Rolls, Rubber Rolls, Gears, Pulleys Etc.

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FROM OUR OWN STOCK "HARD TO FIND MACHINERY":

2—90' Tenters (Straight) W & J Make 52" St. Steel Clips—B.B.
1—100' Tenter 65" (Swing) Complete with Two Sets of A & G Blowers and High Pressure Air-Fin Heaters Top and Bottom Nozzles—St. Steel Clips—Enclosed Gears W & J Make—B.B.
1—60' Textile Tenter Iron Clips for Mercerizing 50" Wide—Excellent Condition.
1—50" Extra Heavy 3 Roll Friction Calender Hydraulic with Pump and Accumulator Textile Make.
1—Moist-O-Graph Speed Controller Brown Instrument Co. Make
1—60" Tenter 30' W & J with Housing and Boland Dryer.

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PROVIDENCE, R. I.

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CIRCULAR KNITTING MACHINES

22—Banner—3½" cyl. 220 N. 48 ga. Rubber attachments and stripers
18—Banner—3½" cyl. 220 N. 48 ga. Plain
11—Banner—3½" cyl. 220 N. 48 ga. 7 step reverse plaiting
20—Banner—3½" cyl. 220 N. 48 ga. Stripers, Mock wrap
10—Banner—3¾" cyl. 220 N. 48 ga. Striper drums
20—Banner—3½" cyl. 300 N. 70 ga. Nib Jack

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MANUFACTURERS AND DEALERS

TEXTILE MACHINERY OF ALL TYPES

APPRAISALS WOOLEN—WORSTED—COTTON LIQUIDATIONS

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GAINES TEXTILE MACHINERY CO.

Dealers in Rebuilt and Guaranteed Yarn Winding and Spinning Machinery

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EXCELLENT TEXTILE EQUIPMENT READY FOR IMMEDIATE SHIPMENT

SPECIAL

4—James Hunter Squeeze Rolls, 2 Top and 1 Bottom Rubber Covered Rolls, 50" Face, Hand Screw Lever Set, with countershaft.

5—James Hunter Squeeze Rolls, 16" Rubber Covered Top and Bottom Steel Roll, Hand Screw Lever Set, with Countershaft.

COMPLETE RAYON WEAVING PLANT

260—Draper Automatic Looms, Modern Slashing, Warping, Winding, Auxiliary Equipment.

KNITTING

160—Scott & Williams Nye & Tredick Circular Ribbers, Range 10" 10 cut 8 feet to 23' 14 cut 12 feed.

New Wildman, Scott & Williams and Nye and Tredick Needles, in original boxes.

SEWING

Union Special	Willcox & Gibbs
52800	All Styles
35300	**Union Buttons**
9900	Button Sewers
15400	**Singers**
16800 with Pullers	All Styles

Metropolitan

192—5 elastic machines with elastic pullers.

WATER SOFTENING AND FILTRATION EQUIPMENT

2—Permutit Water Softeners, 10' Diameter x 16' Long, with Interconnecting Piping, Valves, Meters and large quantity of Zeolite.

2—Permutit Type C, Electric Chemical Feeding Devices, Constant Feed.

1—Permutit Vertical Water Softener, 5' x 6' with Valves, Piping and Zeolite.

7—Hungerford & Terry Horizontal Steel Pressure Water Filters, 8' x 20', 8,000 Gallons Capacity, 5/8" Plate, equipped with Cross Piping 8" Valves and all accessories.

1—Filter Everson 42" x 48".

1—Filter Permutit 6'6" x 6'.

1—Permutit Single Vertical Water Softening Unit, Steel Tank, Size 10' x 10', Oval Slide Manhole Opening, with Trident 3" Water Meter, Safety Valve, and 4 Gate Valves 5#.

COUNTERS

34—Veeder Root Pick Counters.

SPECIAL
ENGRAVING EQUIPMENT

7—John Hope 50" Pantograph Machines, Double Bar.

10—John Hope 48" Pantograph Machines, Double Bar.

1—John Hope 45" Pantograph Machine, Double Bar.

BELTING

1—Lot Wood and Fibre Variable Speed Drive Belts.

FINISHING

Beamer

1—Van Vlaanderen 50", Beaming and Rolling up Machine. Friction Drive.

Bleach House Equipment

2—8' x 9' Kiers.
2—10' Log Washers.
2—Bleach House Squeezers.

Calenders

1—Van Vlaanderen 3 Roll Finishing Calender, Wool Felt Bowls, Large Diameter.
3—Textile 50" 5 Bowl Calenders.
2—Textile 45" 3 Bowl Friction Calenders.

Can Dryers

1—set of 20 Cans Textile Copper Cans 23" diameter, 54" face, Vertical Stack.
1—set of 18 Cans, 23" x 45" face, Vertical Stack.
1—7 Can Butterworth Copper Cans, 23" diameter, 80" face.
1—Textile Can Drying and Rolling Up Machine, Copper Can 36" diameter, 50" face.
1—set of Textile Dry Cans—15 Cans—23" x 78".

CALENDER ROLLS

1—Paper Covered Silk Calender Roll, 50" Face, 16¼" Diameter, 59¾" Between Shoulders, Diameter of End Shaft 4 15/16", Length of End Shaft 6¾".

1—Steel Calender Roll, Newly Cotton Covered, 50" Face, 20" Diameter, 61" between Shoulders, Shaft 9" each End, Diameter 6 15/16".

6—Steel Schreiner Calender Rolls, 42" and 46" Face.

SPECIAL

500—Butterworth Tenter Chain Clips, Type O-O Top Opening, Brass Faced Clips.

Decators

1—Parks & Woolson, 72" Semi-Decater with Blanket, Nash Vacuum Pump and Motor.

Doublers

2—Parks & Woolson 54" Doubling and Reeling Machines.
1—Van Vlaanderen 60" Doubling and Winding Machine.

Dye Becks

1—Monel Metal Solid Tub Dye Beck, 5' with Monel Reels.
2—Stainless Steel Lined Sample Dye Becks.
1—Van Vlaanderen 4' Stainless Steel Lined Dye Beck.
1—Van Vlaanderen 19' Cypress Dye Beck.

Dye Jiggs

6—Textile Copper Lined Dye Jiggs 45" Face.

Dye Padder

1—Butterworth 2 Roll Dye Padder, Brass and Rubber Roll Motor Driven.

SPECIAL

5—Textile Dye Jiggs, 54" Wooden Tub, 2 Rubber Covered Ball Bearing Top Rolls, 4 Stainless Steel Immersion Rolls, Bevel Gear Drive.

1—De Laval Worm Reduction Gear Unit, direct connected to Lincoln 10 H.P. A.C. Motor, 550 volts, 60 Cycle, 3 Phase, 1200 R.P.M., with Control.

1—Battery of 4 Morrison Stainless Steel Dye Jiggs, 50", A.C. Motor Drive.

Embossers

1—Textile Two Roll Embossing Calenders, 12" face, One Roll Gas Heated, Pulley Driven, Complete with Table and Winder.

Extractors

1—American 48" Open Top Motor Driven Extractor, Copper Basket.
3—Hercules 60" Motor Driven Extractors, Copper Basket.

Folders

1—Eastwood Gray Goods Folder, 60" Wide.
3—E & H Flat Folders, 45" to 60" Wide.

GAS SYSTEM

1—Kemp Automatic Gas System, with Rotary Pressure Blower, By-Pass Valve, Back Fire Preventer, and Expansion Chamber.

GEARS

1—Lot Bronze Machine Gears, Assorted Sizes (834 pounds).

METER

1—General Electric Flow Meter, Type F-12.

KETTLES

6—Copper Steam Jacketed Mixing Kettles, Equipped with Double Motion, Bronze Agitators, 70 to 350 Gallons Capacity.

Palmer

1—65" Van Vlaanderen Palmer Tenter Quetsch Unit, with Stainless Clips and Housing.

Printing

1—Werner 50" Single Color Print Machine.
1—Rice, Barton & Fales 7 Color 50" Print Machine.
2—Rice, Barton & Fales, 42" Print Machine, 8 and 11 color.

PRINT MACHINE MOTORS

5—Print Machine Motors, 25 to 35 H.P.

Tenter Frames

1—30' Windsor & Jerauld Open Tenter Frame with Steam Heating Coils.
1—60' Windsor & Jerauld Tenter Frame with Proctor & Schwartz Housing.

FULL WIDTH WASHER

1—8 Compartment 50" Full Width Open Soaper, top and bottom Ball Bearing Rollers.

SPECIAL

1—Butterworth 42" Hydraulic Schreiner 2 Bowl Calender, equipped with Cotton and Steel Engraved Rolls, Gas Heated Friction Unrolling and Batcher, Tension Rolls, Complete with Accumulator and Pump, direct connected to General Electric 3 H.P. A.C. Motor, 550 Volts, 60 Cycle, 3 Phase, 900 R.P.M., Type M. T., with Drum Controller, Magnetic Switch and Grids.

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